REPORT AND RECOMMENDATIONS TO THE MINISTER

REGARDING

THE ENVIRONMENTAL ASSESSMENT REPORT FOR THE PROPOSED POINT ACONI ELECTRICAL GENERATING STATION

NOVA SCOTIA
ENVIRONMENTAL CONTROL COUNCIL

FEBRUARY 23, 1990

90-03279/

Nova Scotia

Environmental Control Council

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Our file no

February 23, 1990

Honourable John G. Leefe
Minister of the Environment
Nova Scotia Department
of the Environment
P.O. Box 2107
Halifax, Nova Scotia
B3J 3B7

Environmental Assessment Report
Point Aconi Generating Station

Dear Minister:

The Nova Scotia Environmental Control Council is pleased to present our environmental assessment of the electrical generating station proposed by the Nova Scotia Power Corporation at Point Aconi on Boularderie Island in Cape Breton.

Our Assessment Panel from the Council consisted of Mrs. Shirley Nicholson, Halifax, and Messrs. Michael McGill, Truro, and James Harrison, Dartmouth.

We recommend that the project be given permission to proceed with a number of stipulations which are set out in the recommendations made in our assessment.

If you wish to have further clarification of any of our comments we would be pleased to meet with you at any time.

Respectfully submitted,

James Harrison,
Chairman

Shirley Nicholson

Michael McGill, P.Eng.

EXECUTIVE SUMMARY

The Nova Scotia Environmental Control Council, upon receiving a request from the provincial Minister of the Environment, initiated hearings in connection with the proposed power plant for Pt. Aconi, Cape Breton.

Prior to travelling to Cape Breton to meet with the community, the panel reviewed the Environmental Assessment Report which was prepared by the Nova Scotia Power Corporation, held meetings with officials of the corporation to familiarize themselves with the report and met with staff at the Nova Scotia Department of the Environment to gain insight into the complexity of environmental issues that might be associated with the project. The hearings were held on January 17, 1990.

In total, the review panel received eighteen oral and ten written submissions which expressed the following concerns:

-area residents' input to the planning and operation of the plant
-legislative restrictions on intervenors
-the accuracy of N.S.P.C'S demand load forecasts
-options to the proposed undertaking
-air emissions and air quality
-protection of domestic water supplies
-effects of dust, noise and traffic
-effect of the project on the fishery
-access to beaches and recreational areas
-the need for new jobs in Cape Breton

In addition to these submissions, the panel studied numerous relevant reports and articles. After carefully considering all of this information:

THE ENVIRONMENTAL CONTROL COUNCIL RECOMMENDS APPROVAL OF THE POINT ACONI GENERATING STATION, WITH CONDITIONS IMPOSED AS OUTLINED IN 56 RECOMMENDATIONS.

These recommendations are not ordered in terms of their priority.

The panel also makes the procedural recommendation that the minister initiate a review of both the Environmental Protection Act and the Environmental Assessment Act and Regulations, addressing the concerns regarding timing, public consultation, access to information, intervenor funding, and the future role of the Environmental Control Council in the assessment process.

PROPOSED POINT ACONI GENERATING STATION

RECOMMENDATIONS FROM THE

ENVIRONMENTAL CONTROL COUNCIL

1. THE PANEL RECOMMENDS APPROVAL OF THE PROJECT WITH CERTAIN CONDITIONS AS OUTLINED IN THE FOLLOWING RECOMMENDATIONS WHICH ARE NOT ORDERED IN TERMS OF PRIORITY.

2. IT IS RECOMMENDED THAT THE NOVA SCOTIA POWER CORPORATION (NSPC) HAVE A MUCH HIGHER PROFILE WITH RESPECT TO WHAT THE CORPORATION IS DOING, AND WHAT THE CUSTOMER CAN DO, TO REDUCE DEMAND THROUGH ENERGY EFFICIENT PROGRAMS.

3. IT IS RECOMMENDED THAT A COMPREHENSIVE RESEARCH AND DEVELOPMENT PROGRAM BY THE NOVA SCOTIA POWER CORPORATION AND THE DEPARTMENT OF MINES AND ENERGY BE CONDUCTED ON ENVIRONMENTALLY-SUPERIOR TECHNOLOGIES AND THEIR APPLICATION IN THIS PROVINCE.

4. IT IS RECOMMENDED THAT NSPC PERIODICALLY UPDATE DEMAND LOAD FORECASTS IN LIGHT OF POSSIBLE SLOWDOWNS IN THE NOVA SCOTIAN ECONOMY, SO THAT THE NEED FOR FUTURE ADDITION(S) TO THE POINT ACONI ELECTRICAL GENERATING CAPABILITY IS FIRMLY ESTABLISHED.

5. IT IS RECOMMENDED THAT NSPC DEVELOP A CONTINGENCY PLAN TO ANALYZE AND DEAL WITH ANY PROBLEM OF LEAKAGE OF GROUND WATER CONTAMINANTS THROUGH THE LINERS FOR THE FUEL AND SORBENT AREAS.

6. IT IS RECOMMENDED THAT NSPC DEVELOP A LONG-TERM MANAGEMENT PLAN FOR DUST CONTROL BASED UPON THE AIR QUALITY MONITORING PROGRAM RESULTS.

7. IT IS RECOMMENDED THAT, RELATIVE TO THE MONITORING OF THE WASTEWATER TREATMENT PLANT EFFLUENT, THERE SHOULD BE CONTINUOUS, AS OPPOSED TO INTERMITTENT, MONITORING TO ENSURE EFFLUENT QUALITY OBJECTIVES/STANDARDS ARE MET BY NSPC.

8. IT IS RECOMMENDED THAT THE SLUDGE FROM THE WASTEWATER TREATMENT PLANT BE ANALYZED TO DETERMINE IF THE ASH MANAGEMENT SITE IS A SUITABLE AND ACCEPTABLE LOCATION FOR DISPOSAL.

9. IT IS RECOMMENDED THAT THE NSPC ADDRESS THE MATTER OF EFFLUENT QUALITY STANDARDS, MONITORING PROCEDURES, AND SLUDGE DISPOSAL FROM THE SEWAGE TREATMENT FACILITY.

10. IT IS RECOMMENDED THAT NSPC PROVIDE A BETTER DEFINITION OF THEIR PLAN TO HANDLE STORMWATER RUNOFF FROM THE ASH DISPOSAL SITE TO AVOID OFF-SITE CONTAMINATION OF SURFACE WATERS.

11. IT IS RECOMMENDED THAT NSPC INSTALL GROUND WATER MONITORING WELLS AROUND THE PERIMETER OF THE ASH DISPOSAL CELL TO DETERMINE IF MIGRATION OF DELETERIOUS SUBSTANCES IS OCCURRING.

12. IT IS RECOMMENDED, AS A MINIMUM STANDARD, THAT NSPC BE REQUIRED TO REVEGETATE THE CAPPED SOLID WASTE DISPOSAL CELLS BY HYDRO-SEEDING.

13. IT IS RECOMMENDED THAT NSPC CARRY OUT ADDITIONAL WELL SURVEYS IN CONJUNCTION WITH LOCAL RESIDENTS TO ESTABLISH A BASELINE OF WATER QUANTITY AND QUALITY, AND TO ENSURE THAT THE LONG-TERM WATER SUPPLY REQUIREMENTS OF THE AREA RESIDENTS ARE ESTABLISHED AND MAINTAINED.

14. IT IS RECOMMENDED THAT NSPC, IN CONJUNCTION WITH LOCAL RESIDENTS, ESTABLISH BEFORE CONSTRUCTION A MUTUALLY ACCEPTABLE CONTINGENCY PLAN DIRECTED TOWARDS ENSURING CONTINUAL SUPPLY OF POTABLE WATER TO ANY RESIDENTS WHO MAY SUFFER LOSS OF WATER AS A RESULT OF THE PROJECT.

15. IT IS RECOMMENDED THAT THE DIMENSIONS AND EXACT LOCATION OF THE COOLING WATER INTAKE STRUCTURE BE DEFINED AND ALSO COMMUNICATED TO THE FISHERMEN IN THE AREA THROUGH THE LOCAL COMMUNITY ASSOCIATION OR A LOCAL MONITORING COMMITTEE.

16. IT IS RECOMMENDED THAT NSPC PLACE FOUR MARKER BUOYS (ONE AT THE NORTH, EAST, SOUTH AND WEST POINTS OF THE COMPASS), TO OUTLINE THE AREA OF POSSIBLE DANGER TO SMALL CRAFT.

17. IT IS RECOMMENDED THAT NSPC WORK OUT WITH THE LOCAL COMMUNITY ASSOCIATION OR LOCAL MONITORING COMMITTEE SOME PROCEDURES ALLOWING FISHERMEN ACCESS TO THE SHORELINE WITHIN THE STATION SITE TO RETRIEVE ANY LOBSTER TRAPS CAST UPON THE SHORE AS A RESULT OF STORMS.

18. IT IS RECOMMENDED THAT THE DEPARTMENT OF FISHERIES AND OCEANS BE INVITED TO GIVE COMMENTS AND SUGGESTIONS REGARDING A LONG-TERM MONITORING PLAN OF THE FISH HABITAT, AND THAT THEIR REMARKS BE MADE AVAILABLE AND DISCUSSED WITH THE COMMUNITY ASSOCIATION OR LOCAL MONITORING COMMITTEE.

19. IT IS RECOMMENDED THAT THE DEPARTMENT OF FISHERIES AND OCEANS BE INVOLVED IN MONITORING OF CHLORINE TREATMENT AND THE POSSIBLE EFFECT ON MARINE LIFE.

20. IT IS RECOMMENDED THAT THE LOCAL COMMUNITY ASSOCIATION OR LOCAL MONITORING COMMITTEE BE INVOLVED IN THE PLANNING AND RECEIPT OF MONITORING INFORMATION AND DATA.

21. IT IS RECOMMENDED THAT CONSIDERATION BE GIVEN TO ISOLATING THE WARM CIRCULATING WATER RETURN AND THAT NSPC ENCOURAGE POSSIBLE FUTURE AQUACULTURE OPERATIONS.

22. IT IS RECOMMENDED THAT THE RETURN WATER OUTFALL BE CLEARLY MARKED AT THE LOCATION ON THE SHORELINE WITH APPROPRIATE WARNING SIGNS FOR PUBLIC PROTECTION.

23. IT IS RECOMMENDED THAT NSPC ADHERE TO THE FEDERAL EMISSIONS GUIDELINES: IN DEVELOPING A CONTINUOUS AIR MONITORING SYSTEM FOR THE POINT ACONI STATION, IN HAVING IT EVALUATED BY AN INDEPENDENT TESTING AGENCY, AND IN REPORTING THE RESULTS, AS STIPULATED IN THE LEGISLATION.

24. IT IS RECOMMENDED THAT NSPC ENUNCIATE A POLICY OF INCLUDING SO_2 EMISSION REDUCTION EQUIPMENT ON FUTURE ELECTRICAL GENERATING UNITS.

25. IT IS RECOMMENDED THAT NSPC DECLARE A POLICY OF RETROFITTING EXISTING FOSSIL FUEL-FIRED GENERATING STATIONS WITH SO_2 REDUCTION EQUIPMENT.

26. IT IS RECOMMENDED THAT NSPC ESTABLISH AND DECLARE A POLICY OF INCORPORATING LOW NO_x DESIGN EQUIPMENT ON EXISTING AND FUTURE GENERATING UNITS.

27. IT IS RECOMMENDED THAT NSPC ESTABLISH AND DECLARE A POLICY OF CO_2 EMISSIONS REDUCTION, INCREASE RESEARCH AND DEVELOPMENT INTO CO_2 REDUCTION TECHNOLOGY AND MAINTAIN ACCESS TO INFORMATION ON WORLDWIDE DEVELOPMENTS OF CO_2 REDUCTION TECHNOLOGY.

28. IT IS RECOMMENDED THAT NSPC INSTALL A FOURTH AMBIENT AIR MONITORING STATION IN THE CAPE DAUPHIN MOUNTAIN AREA.

29. IT IS RECOMMENDED THAT NSPC CONFER WITH FEDERAL AND PROVINCIAL ENVIRONMENTAL AGENCIES REGARDING THE COMPLETE PROTECTION OF THE ENVIRONMENT AND BIRD POPULATION ON THE BIRD ISLANDS.

30. IT IS RECOMMENDED THAT NSPC, IN CONSULTATION WITH FEDERAL AND PROVINCIAL ENVIRONMENTAL AGENCIES, DETERMINE THE POSSIBLE EFFECTIVENESS OF A GROUND LEVEL CONCENTRATION MONITORING STATION FOR AMBIENT AIR QUALITY MEASUREMENTS ON THE BIRD ISLANDS.

31. IT IS RECOMMENDED THAT DATA OBTAINED FROM THE STACK EMISSION MONITORING PROGRAM AND THE GROUND LEVEL CONCENTRATION MONITORING PROGRAM BE MADE AVAILABLE FOR DISCUSSIONS WITH LOCAL COMMUNITY ASSOCIATIONS OR THE LOCAL MONITORING COMMITTEE.

32. IT IS RECOMMENDED THAT NSPC STUDY THE PRODUCTION AND RELEASE OF POLYCYCLIC AROMATIC HYDROCARBONS FROM FOSSIL FUEL-FIRED ELECTRICAL GENERATING UNITS AND BUILD THIS FACTOR INTO THE STACK AND AMBIENT AIR MONITORING PROGRAMS.

33. IT IS RECOMMENDED THAT NSPC CONTINUALLY EVALUATE TECHNOLOGIES WHICH SHOW POTENTIAL FOR HIGHER EFFICIENCIES WITH REDUCED COMBUSTION EMISSIONS.

34. IT IS RECOMMENDED THAT NSPC CONDUCT A COMPREHENSIVE INDUSTRIAL HYGIENE PROGRAM EMBRACING ALL WORKERS AT THE POINT ACONI GENERATING STATION.

35. IT IS RECOMMENDED THAT THE NSPC ENSURE THAT ALL CONTRACTS FOR AIR EMISSION REDUCTION EQUIPMENT CONTAIN FIRM CLAUSES REGARDING PERFORMANCE GUARANTEES.

36. IT IS RECOMMENDED THAT NSPC CARRY OUT A PREBLAST SURVEY BEFORE CONSTRUCTION STARTS AND THAT THE LOCAL MONITORING COMMITTEE BE INVOLVED IN THE PLANNING AND INTERPRETATION OF RESULTS.

37. IT IS RECOMMENDED THAT, PARTICULARLY DURING THE CONSTRUCTION AND STARTUP PHASES, NSPC APPLY AN APPROVED DUST SUPPRESSANT TO DIRT AND GRAVEL ROADS.

38. IT IS RECOMMENDED THAT TRUCKS CARRYING EARTH AND GRAVEL DURING CONSTRUCTION, AND CARRYING COAL AND LIMESTONE DURING PLANT OPERATION, BE COMPLETELY COVERED TO PREVENT SPILLAGE AND DUST NUISANCE.

39. IT IS RECOMMENDED THAT NSPC PREPARE AND HAVE IN PLACE BEFORE CONSTRUCTION A DETAILED CONTINGENCY PLAN FOR PREVENTION AND CLEANUP OF ANY SPILLS OF OILS, CHEMICALS, COAL AND LIMESTONE.

40. IT IS RECOMMENDED THAT NSPC BE REQUIRED TO GIVE PRIOR NOTICE OF ANY STEAM PURGING NOT ONLY THROUGH THE LOCAL MEDIA, BUT ALSO THROUGH THE LOCAL MONITORING COMMITTEE AND COMMUNITY ASSOCIATIONS AND SCHOOLS IN THE AREA.

41. IT IS RECOMMENDED THAT NSPC MAINTAIN A COMPLETE INVENTORY OF HAZARDOUS CHEMICALS ON SITE WITH A LOCATION PLAN AND APPROPRIATE DATA SHEETS, AND THAT A COPY BE GIVEN TO THE LOCAL FIRE DEPARTMENT, THE RCMP DETACHMENT AND THE DEPARTMENT OF THE ENVIRONMENT.

42. IT IS RECOMMENDED THAT NSPC CONFIRM THAT THE CONSTRUCTION AND OPERATION OF THE POINT ACONI PLANT WILL BE CARRIED OUT AS SPECIFIED IN THE EA REPORT AND ACCOMPANYING DOCUMENTATION, AND AS SET OUT IN THE STIPULATIONS IMPOSED BY THE ENVIRONMENTAL ASSESSMENT REVIEW.

43. IT IS RECOMMENDED THAT, IN EVALUATING THE IMPACT OF THE PROPOSED POINT ACONI STATION, THERE BE SERIOUS CONSIDERATION GIVEN TO THE POSITIVE SOCIO-ECONOMIC EFFECT ON CAPE BRETON AND, IN PARTICULAR, THE POINT ACONI AREA.

44. IT IS RECOMMENDED THAT NSPC CONDUCT A NOISE MONITORING PROGRAM DURING OPERATION OF THE PLANT, TO INCLUDE MEASUREMENT OF SOUND PRESSURE LEVELS AT PLANT SITE BOUNDARIES AND WITHIN THE OPERATING PLANT, AND THAT THIS DATA BE SUBMITTED TO THE NOVA SCOTIA DEPARTMENT OF THE ENVIRONMENT.

45. IT IS RECOMMENDED THAT THE MINISTER OF ENVIRONMENT INFORM THE MINISTER OF TRANSPORTATION THAT THE POINT ACONI COMMUNITY ASSOCIATION WANTS TO MAINTAIN ACCESS FROM MILL POND ROAD TO POINT ACONI ROAD AND THAT THE DEPARTMENT OF TRANSPORTATION DISCUSS THE MATTER WITH THE COMMUNITY ASSOCIATION.

46. IT IS RECOMMENDED THAT NSPC BE REQUIRED TO KEEP THE BEACH AREAS ADJACENT TO THE PLANT SITE OPEN AND ACCESSIBLE BY ROAD TO RESIDENTS.

47. IT IS RECOMMENDED THAT NSPC PROVIDE FOR BUFFER STRIPS OF VEGETATION ALONG THE SHORELINE AND HIGHWAY TO IMPROVE THE APPEARANCE OF THE SITE(S).

48. IT IS RECOMMENDED THAT NSPC KEEP UP TO DATE ON STUDIES BY THE SCIENTIFIC AND MEDICAL DISCIPLINES REGARDING THE EFFECTS OF HIGH VOLTAGE EMISSIONS ON HUMANS, ANIMALS AND CROPS.

49. IT IS RECOMMENDED THAT NSPC INSTALL THE NECESSARY TRANSMISSION LINES FROM THE POINT ACONI STATION WELL AWAY FROM RESIDENCES, SCHOOLS AND FARMS, AND THAT THE ACTUAL ROUTINGS BE DISCUSSED WITH THE POINT ACONI ROAD COMMUNITY DEVELOPMENT ASSOCIATION.

50. IT IS RECOMMENDED THAT A LOCAL MONITORING COMMITTEE BE FORMED BEFORE CONSTRUCTION BEGINS, CONSISTING OF REPRESENTATION FROM: THE POINT ACONI ROAD COMMUNITY DEVELOPMENT ASSOCIATION, THE FISHING COMMUNITY, THE AGRICULTURAL COMMUNITY, NOVA SCOTIA POWER CORPORATION, THE NOVA SCOTIA DEPARTMENT OF THE ENVIRONMENT (SYDNEY OFFICE), THE BRAS D'OR NORTH COMMUNITY DEVELOPMENT ASSOCIATION, AND THE GENERAL CONTRACTOR.

51. IT IS RECOMMENDED THAT THE LOCAL MONITORING COMMITTEE SHALL HAVE THE MANDATE TO PARTICIPATE IN THE PROJECT PLANNING PROCESS IN ALL ASPECTS OF THE PROJECT THAT MAY HAVE AN IMPACT ON THE LOCAL AREA, IN PARTICULAR THAT THE COMMITTEE SHALL ESTABLISH PRE-CONSTRUCTION BASELINE DATA ON POTENTIAL ITEMS OF CONCERN THAT HAVE ARISEN OR MAY ARISE AS THE PROJECT PROCEEDS.

52. IT IS RECOMMENDED THAT THE LOCAL MONITORING COMMITTEE BE INVOLVED IN THE PREPARATION OF CONTINGENCY PLANS RELATING TO SOLUTION OF ANY PLANT IMPACT ON THE LOCAL AREA.

53. IT IS RECOMMENDED THAT THE LOCAL MONITORING COMMITTEE BE THE VEHICLE THROUGH WHICH THE RESIDENTS REGISTER THEIR COMPLAINTS REGARDING ANY PERCEIVED LOSS OR DAMAGE.

54. IT IS RECOMMENDED THAT THE NOVA SCOTIA DEPARTMENT OF THE ENVIRONMENT AND NSPC SPELL OUT CLEARLY THAT ANY EXPANSION BEYOND THE PROPOSED 165MW CAPABILITY AT POINT ACONI WILL BE SUBJECTED TO ANOTHER ENVIRONMENTAL ASSESSMENT REVIEW AND PUBLIC CONSULTATION PROCESS, AND THAT THIS FACT BE COMMUNICATED TO THE LOCAL COMMUNITY ASSOCIATION AND THE LOCAL MONITORING COMMITTEE.

55. IT IS RECOMMENDED THAT NSPC DEVELOP A POLICY AND PLAN THAT WILL ENSURE APPROPRIATE CLEANUP AND LONG-TERM MONITORING OF THE SITES WHEN ABANDONED, AND THAT THIS COMMITMENT FORM PART OF THE OPERATING PERMIT THAT MIGHT BE ISSUED TO THE CORPORATION.

56. IT IS RECOMMENDED THAT NSPC EXPLORE OUTLETS TO REUSE THE POTENTIALLY VALUABLE ASH BY-PRODUCT FROM THE FLUIDIZED COMBUSTION PROCESS.

Procedural Recommendation

The panel also makes the procedural recommendation that the Minister initiate a review of both the Environmental Protection Act and the Environmental Assessment Act and Regulations, addressing the concerns regarding timing, public consultation, access to information, intervenor funding, and the future role of the Environmental Control Council in the assessment process.

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SECTION 1

INTRODUCTION

The Nova Scotia Power Corporation announced plans to build a 165 MW generating station at Pt. Aconi, on Boularderie Island, Cape Breton, based on a requirement for new generating capacity.

NSPC proposes to construct a unit using Circulating Fluidized Bed (CFB) combustion technology. The unit will have turbine generators, coal and limestone storage and handling facilities, an ash management area, a well field to supply fresh water and a circulating water (CW) system. The proposed site for this generating unit is shown on the following page.

The Minister of the Environment, the Honourable John G. Leefe, referred the Environmental Assessment Report prepared by NSPC to the Environmental Control Council, thereby requesting that the Council undertake an assessment of the project through public consultation.

The Nova Scotia Environmental Control Council, at its 08 November, 1989, meeting, authorized the formation of a review panel, charged with the responsibility for conducting the public consultation process and reporting to the Minister. This review panel consisted of Environmental Control Council members Shirley Nicholson, Michael McGill and James Harrison (Chairman).

LOCATION OF THE PROPOSED
POINT ACONI GENERATING STATION
ON BOULARDERIE ISLAND, CAPE BRETON

SECTION 2

BACKGROUND OF EVENTS LEADING TO THE E.C.C. REVIEW

December 2, 1988 - Project registered by the Nova Scotia Power Corporation under the Environmental Protection Act.

June 27, 1989 - The new Environmental Assessment Act was proclaimed, effective July 14, 1989.

July 28, 1989 - The Nova Scotia Power Corporation voluntarily re-registered the project under the new Environmental Assessment Act.

August 2, 1989 - Preparation of Terms of Reference for the Environmental Assessment Report.

September 11, 1989 - Comments were received by the minister on the proposed Terms of Reference.

November 8, 1989 - Environmental Control Council appointed an environmental assessment review panel.

December 1, 1989 - Environmental Assessment Report was prepared by the Nova Scotia Power Corporation.

December 5, 1989 - Environmental Assessment Report was assessed by the Minister to determine whether it satisfied the Terms of Reference.

December 9, 1989 - Environmental Assessment Report was made available for public scrutiny.

December 11, 1989 - Minister referred the report to the Environmental Control Council, requesting that the Council initiate a public consultation process.

December 12, 22, 29, 1989 - Advertisements were placed announcing the time and location of the hearings.

January 17, 1990 - Public consultation meetings held in Point Aconi.

SECTION 3

MANDATE OF THE ENVIRONMENTAL CONTROL COUNCIL

Environmental Protection Act

Section 17 (2) The Minister at any time may authorize the Council or the Committee to review decisions made or conduct and hold hearings in relation to plan approvals, permits, orders made by the Minister or Deputy Minister and any other matter pertaining to the preservation and protection of the environment and report and make recommendations to him in relation thereto.

(2a) Where the Minister authorizes the council to review decisions made or conduct and hold hearings pursuant to subsection (2), the chairman of the Council may designate two or more members of the Council to act for the Council and for this purpose these members shall be the Council and shall have all of the powers of the Council. (S.N.S. 1975, c. 66. s. 2)

Environmental Assessment Act

The new Environmental Assessment Act, proclaimed in 1989, broadened the definition of the environment. This definition now says in **Section 3(d)** of the Act:

(d) "environment" includes
- (i) air, land and water,
- (ii) plant and animal life including human life,
- (iii) the social, economic recreational, cultural and aesthetic conditions and factors that influence the life of humans or a community,
- (iv) a building, structure, machine or other device or thing made by humans,
- (v) a solid , liquid, gas, odor, heat, sound, vibration or radiation resulting directly or indirectly from the activities of humans, or
- (vi) any part or combination of the foregoing and the interrelationships between two or more of them;

Section 15 (1) The Council shall

(a) review an environmental assessment in respect of an undertaking referred to the Council by the Minister;

(b) consult with the public in accordance with subsection (1) of Section 16;

(c) recommend to the Minister the approval or disapproval of an undertaking, or conditions which ought to be imposed upon an undertaking if it proceeds;

(d) perform functions and exercise powers conferred upon the council in respect of the Environmental Protection Act;

(e) perform such functions and exercise such powers as may be assigned to or conferred upon the Council by the Governor in Council or the Minister.

(2) The Council may appoint a committee of not less than two members of the Council, or authorize the chairman of the Council to appoint such a committee, to perform any of the functions or exercise any of the powers of the Council

Section 16 (1) In reviewing an environmental assessment pursuant to clause (a) of subsection (1) of Section 15, the Council shall consult with the public by inviting written submissions from the public, by conducting a public hearing or in such other manner as determined by the Council.

(2) A hearing conducted pursuant to subsection (1) shall, except as otherwise prescribed, be conducted in the same manner as a review held pursuant to the Environmental Protection Act and the Council and each member has the authority set forth in the Environmental Protection Act with respect to a review.

SECTION 4

PUBLIC CONSULTATION AT PT. ACONI

Public consultation sessions were held at Pt. Aconi on January 17, 1990. The schedule for presentations and the opening remarks by the chairman are attached to this report in the appendices.

Eighteen (18) oral and ten (10) written submissions were received, and are listed in the appendices.

SECTION 5

CONCERNS EXPRESSED

AND

RECOMMENDATIONS

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5.1 Legislation
5.2 Alternatives
5.3 Fuel and Sorbent Management
5.4 Liquid Waste Management
5.5 Solid Waste Management
5.6 Fresh Water Supply
5.7 Circulating Water System
5.8 Air Quality
5.9 General Construction Practices
5.10 Community Concerns
5.11 Local Monitoring Committee
5.12 Specific Comments

SECTION 5.1

COMMENTS REGARDING

LEGISLATION

5.1.1 Hearing procedures
5.1.2 Time Limits
5.1.3 Intervenor Funding
5.1.4 Public Participation
5.1.5 Acts and Regulations

SECTION 5.1

LEGISLATION

5.1.1 Hearing Procedures:

The Environmental Protection Act and Regulations provides that this Environmental Control Council can decide on the manner in which hearings may be conducted. The Council chose the relatively informal procedures to encourage the widest possible public participation. During the hearings we did allow questions to be directed and answered. In our view this provided the opportunity for adequate cross-examination if persons in attendance wished to do so.

5.1.2 Time Limits:

Some persons expressed concern that time limits, as provided under the Act and Regulations, for the public response is too narrow: no such comments about time limits were received from the proponents. This subject is not in the precise mandate for the Environmental Control Council and the whole subject should be examined by Department of the Environment staff.

Indeed, members of the Environmental Control Council themselves expressed concern about the timing required to carry out the environmental assessment reviews and also the amount of time required of members, who are on a part-time basis, to carry out duties related to public hearings and report preparation and completion.

5.1.3 Intervenor Funding:

The subject of intervenor funding was mentioned by several persons. The Environmental Protection Act and the Environmental Assessment Act in Nova Scotia do not provide for funding of groups or individuals unless the Environmental Control Council itself specifically wants to engage an "expert" for testimony or advice.

5.1.4 Public Participation:

The statement was made that there were no provisions for direct public participation in the planning and evaluation process. The Acts involve the public during the planning of the Terms of Reference for the Environmental Assessment Report by the proponent. The Act does not provide direct public participation during the planning stages of the project itself. However, in this case, NSPC did have preliminary consultations and meetings with residents and fishermen in the Point Aconi area.

There is opportunity for the public to address concerns and this takes place under the environmental assessment review process. As a result of this review process the Minister can impose any conditions on the project that may be required to meet the environmental concerns.

5.1.5 Acts and Regulations:

Comments were made on the actual Acts and Regulations as follows:

- timing and extent and method of citizen input
- disclosure and exchange of relative information
- unrealistic short time for citizen groups to prepare
- extension of time frames by Minister

Changes in the Acts and Regulations are not the mandate of this Environmental Assessment Review Panel. The Act is specific as to timing of the various steps in the procedures during the environmental assessment review process. The Act provides a means for public input and information relative to this particular project was available to the public from the Department of the Environment.

Having evaluated the above concerns and in consideration of our mandate to evaluate the Environmental Assessment Report, we make this recommendation:

RECOMMENDATION NO. 1

THE PANEL RECOMMENDS APPROVAL OF THE PROJECT WITH CERTAIN CONDITIONS AS OUTLINED IN THE FOLLOWING RECOMMENDATIONS WHICH ARE NOT ORDERED IN TERMS OF PRIORITY.

Persons who expressed these concerns either orally or by written submission to the Environmental Control Council were:

Neal Livingston
Bruno Marcocchio
Heidi Schwartz
Paul Miller

SECTION 5.2

ALTERNATIVES

TO THE

UNDERTAKING

5.2.1 Load Forecasting
5.2.2 Efficiency & Conservation
5.2.3 Supply Side Options

SECTION 5.2

ALTERNATIVES:

5.2.1 Load Forecasting:

There were concerns expressed that the load forecasts and the need for the Point Aconi station were overstated. Based on the NSPC experience of a 3.3% mean average error versus a 9.4% mean average error among Canadian electrical utilities, and compared to a 11.6% mean average error among electrical utility companies in the U.S.A., this Panel accepts the electrical demand loads forecasted by NSPC, and the need for additional electrical generating capability.

Using NSPC figures, by 1993/94 the company's generation reserve capability will decline to 15%. Therefore, we believe the NSPC has to address this problem and have a solution in place for Nova Scotian consumers.

5.2.2 Efficiency and Conservation:

Comments were made regarding the commitment of NSPC towards programs directed to conservation of electricity and to efficient use. This Panel agrees that the consuming public creates the demand and the utility has the responsibility to meet this demand.

The Panel noted that, in its EA Report, NSPC mentioned involvement in a detailed study on demand side management for the Board of Commissioners of Public Utilities of Nova Scotia. The purpose of the study is "to determine whether conservation and load management initiatives could result in reduced cost of service for customers of Nova Scotia Power; to identify programs that have such potential and to calculate the costs and benefits of each", with completion of the study in April, 1990. This study is somewhat negated by society's ever-increasing demand for electrical services.

In this respect the Council makes this recommendation:

RECOMMENDATION NO.2

IT IS RECOMMENDED THAT THE NOVA SCOTIA POWER CORPORATION (NSPC) HAVE A MUCH HIGHER PROFILE WITH RESPECT TO WHAT THE CORPORATION IS DOING, AND WHAT THE CUSTOMER CAN DO, TO REDUCE DEMAND THROUGH ENERGY EFFICIENT PROGRAMS.

5.2.3 Supply Side Options:

Evidence was presented regarding various NSPC studies about options that could be taken advantage of on the supply side: oil, wood, hydro, wind, methane, tidal, nuclear, out-of-province purchases. At the present time the Panel considers these options by themselves are not viable alternatives to what is proposed by this project of the NSPC, but they may appear as reasonable options in the future.

The question of emerging technologies such as: circulating fluidized bed combustion, flue gas desulphurization, integrated gasification combined cycle, coal-liquid fuels, conventional generation with advanced sulphur removal, advanced nitrogen oxides removal, alternative fuels, was examined and discussed. The Panel believes that the NSPC should continue access to information regarding ongoing research projects, and also that NSPC should maintain a strong and active Research and Development program on these emerging technologies.

While the Panel believes our mandate is to deal with the specific environmental aspects, it is appropriate to comment that NSPC should not neglect considering and evaluating other options like tidal, nuclear, private power purchase, out-of-province purchase, to meet future energy demands.

RECOMMENDATION NO.3

IT IS RECOMMENDED THAT A COMPREHENSIVE RESEARCH AND DEVELOPMENT PROGRAM BY THE NOVA SCOTIA POWER CORPORATION AND THE DEPARTMENT OF MINES AND ENERGY BE CONDUCTED ON ENVIRONMENTALLY-SUPERIOR TECHNOLOGIES AND THEIR APPLICATION IN THIS PROVINCE.

RECOMMENDATION NO.4

IT IS RECOMMENDED THAT NSPC PERIODICALLY UPDATE DEMAND LOAD FORECASTS IN LIGHT OF POSSIBLE SLOWDOWNS IN THE NOVA SCOTIAN ECONOMY, SO THAT THE NEED FOR FUTURE ADDITION(S) TO THE POINT ACONI ELECTRICAL GENERATING CAPABILITY IS FIRMLY ESTABLISHED.

Persons who addressed this particular group of concerns were:

Neal Livingston
Bruno Marcocchio
Kevin Chisholm
Ron Nicholson
Aaron Schneider
Roberta Bruce
William Marcus

SECTION 5.3

FUEL AND SORBENT MANAGEMENT

5.3.1 Leachate Management
5.3.2 Dust Control
5.3.3 Traffic

SECTION 5.3

FUEL AND SORBENT MANAGEMENT

Concerns expressed under fuel and sorbent management can be broken into three categories: **(a)** Leachate management plan which includes the handling, storage and monitoring of coal and limetone; **(b)** Dust control and monitoring; **(c)** Traffic which arises from delivery of coal and limestone.

5.3.1 Leachate Management:

Of prime concern is the possibility of leachate migration from the coal and limestone storage piles into the surrounding water table. To address this concern it is necessary to refer to the EA Report which states that the geology of the site "is typical of a multi-layered sandstone deposit which may contain a number of discontinuities that make detailed geologic assessments difficult. Since geologic discontinuities are potential leachate migration routes, defining the location of these formations is important". (P. 5-11 Sec. 5.3.1)

Two separate geologic surveys have mapped the Boisdale anticlinal fold (which has an increased incidence of fracture and is a possible leachate migration route) as occuring in different proximities to the site. The EA Report states, "The disagreement between the surveys contributes to the uncertainty about the potential for leachate migration." (P. 5-14, Sec. 5.3.1)

A siltstone outcropping in the coal storage area adds to the possibility of leachate migration, "Because of an increased incidence of fractures associated with outcropping, such a formation typically provides a seepage pathway at the interface between the two dissimilar bedrocks". (P. 5-14, Sec. 5.3.1)

The complexity of predicting subsurface conditions is paralleled by the variances existing in site hydrogeology. "The hydrogeology beneath the coal and limestone storage areas is difficult to characterize for such a complex region...it is concluded that, in general, engineered or natural liners will be provided for the coal and limestone storage areas". (P. 5-19,5-20, Sec. 5.3.2)

One proponent expresssed concern that the liner might leak, thus allowing heavy metals and sulphate to contaminate the groundwater. The EA Report states that although the site can be considered a groundwater discharge zone "...any leachate generated on the station site (if not contained) would migrate within the upper till deposit towards the ocean and away from potential resource users" (P. 5-22, Sec. 5.3.3). Background concentrations have been established and will be used as a baseline for future monitoring programs.

While studies have shown that "the natural groundwater and surface water flow direction is generally towards the ocean". (P. 5-28, Sec. 5.4.1) and under normal conditions "groundwater tends to migrate upward, restricting movement of contaminants into the aquifer below" (P. 5-28, Sec. 5.4.1) conditions at the site could hardly be classified as normal. Therefore, "Fractures found in the upper bedrock units may provide seepage pathways to the lower groundwater aquifer". (P. 5-29, Sec. 5.4.1).

The EA Report states that the coal pile leachate will be very acidic "with potential for the uptake of metals" (P. 5-8, Sec. 5.2.2). The limestone pile leachate will be alkaline with an expected low concentration of heavy metals. (P. 5-11, Sec. 5.2.4).

The proponent states, "The natural ability of the site to contain and attenuate leachate is the most important factor influencing the management philosophy". (P. 5-28, Sec. 5.4.1). Their leachate management plan for surface water runoff and groundwater seepage control is summarized as a "Concentrate and Contain" philosophy. (P. 5-29, Sec. 5.4.1). All effluent "will be contained by using a synthetic material or fill of low permeability". (P. 5-29, Sec. 5.4.1). This liner will extend beneath the coal and limestone storage piles and under the ditching and the runoff collection pond.

The proponent proposes two designs for the liner which will meet permeability standards of $1X10^{6}$ cm/s. The liner of synthetic material appears to be the better choice as the liner permeability will be less than $1X10^{-7}$ cm/s. We are assured that "The integrity of the liner will be checked as part of a groundwater effects monitoring program". (P. 5-30, Sec. 5.4.1)

The leachate collected in the runoff pond will be contained and processed through the waste water treatment facility. The containment of heavy metals in the leachate is determined by the sedimentation stage of the process.

While monitoring of groundwater beneath coal and limestone storage areas is a commitment by the proponent, it is imperative that should any trace of heavy metals occur in the groundwater, immediate steps be taken to prevent further contamination. A suggestion by two intervenors that the coal and limestone areas be protected from nature's elements, while being at present cost prohibitive, may, when the variables stated regarding the possibility of leachate migration are taken into consideration, require further study and be environmentally feasible.

The Panel believes that the proponent has adequately addressed the management of leachate from the coal and limestone storage areas by collecting all of the leachate and delivering it to a treatment system while providing long-term monitoring of ground water in the area.

However, the possibility of ground water contamination from leakage of the liners exists and has not been addressed by the proponent.

RECOMMENDATION NO.5

IT IS RECOMMENDED THAT NSPC DEVELOP A CONTINGENCY PLAN TO ANALYZE AND DEAL WITH ANY PROBLEM OF LEAKAGE OF GROUND WATER CONTAMINANTS THROUGH THE LINERS FOR THE FUEL AND SORBENT AREAS.

5.3.2 Dust Control:

While NSPC is confident "that responsible management of the coal storage and handling area will eliminate most concerns related to dust" (P. 5-30, Sec. 5.4.2) they were asked to elaborate on 'responsible management'.

In the delivery process, dust suppression will be achieved through a series of water nozzles. For storage "The piles will be managed in line with standard NSPC operating practice consisting in general of proper placing, compacting and sloping. For the inactive (dead) storage pile, dust suppressants may be used if required. For active (live) storage pile, spraying with water from trucks may be used if required." (Response to questions posed by E.C.C.)

When questioned at the Point Aconi hearing as to the choice of an encrusting agent the Panel was told it would be an oil emulsion. Further written clarification from NSPC states that if a dust suppressant is required, the one used will be calcium chloride.

Questioned as to weekend transportation of coal from the active storage pile to the hopper, the Panel was informed that rubber-tired loaders with special side-boards would be used. Dust control measures will consist of water sprays and the roadway can be cleaned with industrial brush-type cleaners.

The EA Report gives assurance that any site locations at which dusting may occur will have particulate monitoring "using high volume particulate samplers to monitor dust concentrations". (P. 5-36, Sec. 5.6) "Monitoring results will determine the level of dust control required to ensure background air quality will not be significantly affected". (P. 12-6, Sec. 12.3) It is to be stressed that 'responsible management' must include the suppression of dust wherever and whenever possible.

RECOMMENDATION NO.6:

IT IS RECOMMENDED THAT NSPC DEVELOP A LONG-TERM MANAGEMENT PLAN FOR DUST CONTROL BASED UPON THE AIR QUALITY MONITORING RESULTS.

5.3.3 Traffic:

Concern was expressed with regard to the extra truck traffic created by the delivery of coal and limestone to the station site.

Approximately 92 delivery trucks will be required per day to operate the station and maintain two storage piles. The active storage pile will contain 40,000 tonnes and the inactive storage pile will contain 120,000. This inactive pile provides for an emergency supply of approximately three months" (Clarification of response at hearing, page 235 of transcript).

Approximately 44 limestone delivery trucks per day will be required to supply sorbent material and to maintain a limestone storage pile of 50,000 tonnes.

Delivery of both coal and limestone will be carried out on a schedule of eight hours per day, five days per week.

Once the extension of Highway 162 from the Prince Mine to the station site is completed, coal delivery truck traffic will not be a problem, however 44 limestone delivery trucks will be using the main highway on a continual basis.

Persons who addressed these concerns were:

Ted Marsh
Melvin Howly
Vincent Day
Bruno Marcocchio
Brian Boudreau
Lois Corbett

SECTION 5.4

LIQUID WASTE MANAGEMENT

5.4.1 Wastewater Treatment
5.4.2 Sewage Treatment Facility

SECTION 5.4

LIQUID WASTE MANAGEMENT

5.4.1 Wastewater Treatment Facility:

The Wastewater Treatment Facility receives and treats:
- coal and limestone runoff
- all contaminated process waste water from the plant

The treatment stages include oil removal, sedimentation and flocculation. The design principle, in this Panel's viewpoint, is adequate.

The proponent identified in the EA Report, that manganese, aluminum and colour were potential problems requiring treatment of the waters before discharge. However, the quality objectives for the effluent do not address these contaminants and should be investigated.

RECOMMENDATION NO.7:

IT IS RECOMMENDED THAT, RELATIVE TO THE MONITORING OF THE WASTEWATER TREATMENT PLANT EFFLUENT, THERE SHOULD BE CONTINUOUS, AS OPPOSED TO INTERMITTENT, MONITORING TO ENSURE EFFLUENT QUALITY OBJECTIVES/STANDARDS ARE MET BY NSPC.

The process sludges from the Wastewater Treatment Plant are proposed to be disposed of at the ash management site.

RECOMMENDATION NO.8:

IT IS RECOMMENDED THAT THE SLUDGE FROM THE WASTEWATER TREATMENT PLANT BE ANALYZED TO DETERMINE IF THE ASH MANAGEMENT SITE IS A SUITABLE AND ACCEPTABLE LOCATION FOR DISPOSAL.

5.4.2 Sewage Treatment Facility:

The sewage Treatment Facility for the Point Aconi station is inadequately described in the EA Report and it is difficult to give an environmental assessment of it. In particular, the treatment process is vague but the Panel has assumed that it will be a typical domestic sewage treatment plant. There is no mention of effluent quality standards, monitoring procedures or of sludge disposal from the plant.

RECOMMENDATION NO.9:

IT IS RECOMMENDED THAT THE NSPC ADDRESS THE MATTER OF EFFLUENT QUALITY STANDARDS, MONITORING PROCEDURES AND SLUDGE DISPOSAL FROM THE SEWAGE TREATMENT FACILITY.

SECTION 5.5

SOLID WASTE MANAGEMENT

5.5.1 Solid Waste Disposal Site and Cells
5.5.2 Monitoring
5.5.3 Buffer Zones Along Road

SECTION 5.5

SOLID WASTE MANAGEMENT

Concerns were expressed regarding the amount and the method of disposal of the waste ash product. The plant will produce 205,000 tonnes per year of dry ash, and the optimum disposal method was determined by the proponent as being stabilized landfill. The Panel concurs with NSPC's decision to go the landfill route for disposal.

5.5.1 Solid Waste Disposal Site and Cells:

The stabilized landfill consists of landfilling conditioned ash in a lined disposal cell, which is used to collect and retain all leachate from the ash. The leachate is recycled to produce a stabilized, inert material.

Preliminary design analyses by the proponent indicated that conditioning of this waste ash will result in a solid of acceptable permeability and that it may itself be suitable as a liner for the cell.

In the EA Report there appears to be uncertainty as to how the water management from the ash cell, which includes both leachate and storm water, is handled to avoid off-site surface water contamination.

RECOMMENDATION NO.10:

IT IS RECOMMENDED THAT NSPC PROVIDE A BETTER DEFINITION OF THEIR PLAN TO HANDLE STORMWATER RUNOFF FROM THE ASH DISPOSAL SITE TO AVOID OFF-SITE CONTAMINATION OF SURFACE WATERS.

5.5.2 Monitoring:

The 2-year monitoring program proposed in the EA Report will determine the leachate quality and the quality of the sedimentation ponds effluent. No provision for ground water monitoring is mentioned.

RECOMMENDATION NO.11:

IT IS RECOMMENDED THAT NSPC INSTALL GROUND WATER MONITORING WELLS AROUND THE PERIMETER OF THE ASH DISPOSAL CELL TO DETERMINE IF MIGRATION OF DELETERIOUS SUBSTANCES IS OCCURRING.

5.5.3 Buffer Zones:

The proponent indicates that the solid waste disposal cells will be covered with natural till to seal the surface from water infiltration. As a minimum the cell when capped should be hydro-seeded or re-vegetated.

RECOMMENDATION NO.12:

IT IS RECOMMENDED, AS A MINIMUM STANDARD, THAT NSPC BE REQUIRED TO REVEGETATE THE CAPPED SOLID WASTE DISPOSAL CELLS BY HYDRO-SEEDING.

SECTION 5.6

FRESH WATER SUPPLY

5.6.1 Lower Morien Well Field
5.6.2 Monitoring Wells
5.6.3 Contingency Plan for Residents

SECTION 5.6

FRESH WATER SUPPLY

5.6.1 Lower Morien Field:

This Panel agrees that the Lower Morien Field aquifer is the only capable fresh water supply for the Point Aconi station. NSPC's hydrological studies indicate that there is enough water for the operational needs of this project without affecting the local water supply.

5.6.2 Monitoring:

Although the proponent had some observation wells to address the concerns of the residents regarding quantity and quality of the fresh water, the Panel believes that more vigilant monitoring is desirable.

Baseline study of wells in the area is needed before construction with continuing monitoring during construction and operation. This continual monitoring of wells is necessary to minimize the risk of contamination and or loss of water supply in the area.

RECOMMENDATION NO.13:

IT IS RECOMMENDED THAT NSPC CARRY OUT ADDITIONAL WELL SURVEYS IN CONJUNCTION WITH LOCAL RESIDENTS TO ESTABLISH A BASELINE OF WATER QUANTITY AND QUALITY, AND TO ENSURE THAT THE LONG-TERM WATER SUPPLY REQUIREMENTS OF THE AREA RESIDENTS ARE ESTABLISHED AND MAINTAINED.

5.6.3 Contingency Plan:

RECOMMENDATION NO.14:

IT IS RECOMMENDED THAT NSPC, IN CONJUCTION WITH LOCAL RESIDENTS, ESTABLISH BEFORE CONSTRUCTION A MUTUALLY ACCEPTABLE CONTINGENCY PLAN DIRECTED TOWARDS ENSURING CONTINUAL SUPPLY OF POTABLE WATER TO ANY RESIDENTS WHO MAY SUFFER LOSS OF WATER AS A RESULT OF THE PROJECT.

SECTION 5.7

CIRCULATING WATER

SYSTEM

5.7.1 Fish Return
5.7.2 Access by Fishermen
5.7.3 Effect on Fishery
5.7.4 Effect of Chlorination
5.7.5 Aquaculture
5.7.6 Outfall Signs
5.7.7 Construction of Intake & Outfall

SECTION 5.7

CIRCULATING WATER SYSTEM

The circulating cooling water system at the proposed Point Aconi station uses sea water at a design rate of 7.25 cubic metres per second to condense the turbine exhaust and for auxiliary cooling at the station. Concerns were mentioned at the public consultation meetings about: return of any entrapped fish, access by fishermen around the intake, the effect of warm water on the fishery, the effect of chlorination, use of warm water for aquaculture, and the effect of construction activity on the fishermen.

5.7.1 Fish Return:

It was stated that there should be some system for returning any fish trapped in the intake structure back to the ocean. The EA Report (P. 9-66) mentions that a program to monitor trapped fish will be undertaken and that the design of the intake allows retrofit of a fish return mechanism if necessary.

The Panel feels this proposal is satisfactory, although we wonder why the intake water at the intake structure is three times the velocity at the pump screen (0.45 m/sec/ versis 0.15 m/sec.).

5.7.2 Access by Fishermen:

A question was asked about the access of fishermen to place traps in the area of the intake structure. The EA Report says that there will be a buoy marker over the intake structure itself. This structure will be 7.5-8.5 metres below the surface at low tide and 3.5 metres above the sea floor. However, the dimensions of this structure are not defined in Figures 9-1 and 9-2 in the EA Report nor does the Report consider the effects of wave heights on the water depths over the intake structure.

RECOMMENDATION NO.15:

IT IS RECOMMENDED THAT THE DIMENSIONS AND EXACT LOCATION OF THE COOLING WATER INTAKE STRUCTURE BE DEFINED AND COMMUNICATED TO THE FISHERMEN IN THE AREA THROUGH THE LOCAL COMMUNITY ASSOCIATION OR A LOCAL MONITORING COMMITTEE.

RECOMMENDATION NO.16:

IT IS RECOMMENDED THAT NSPC PLACE FOUR MARKER BUOYS (ONE AT THE NORTH, EAST, SOUTH AND WEST POINTS OF THE COMPASS), TO OUTLINE THE AREA OF POSSIBLE DANGER TO SMALL CRAFT.

RECOMMENDATION NO.17:

IT IS RECOMMENDED THAT NSPC WORK OUT WITH THE LOCAL COMMUNITY ASSOCIATION OR LOCAL MONITORING COMMITTEE SOME PROCEDURES ALLOWING FISHERMEN ACCESS TO THE SHORELINE WITHIN THE STATION SITE TO RETRIEVE ANY LOBSTER TRAPS CAST UPON THE SHORE AS A RESULT OF STORMS.

5.7.3 Effect on the Fishery:

There was concern about the effect of the warmer return water on the marine environment, particularly the fish population. This return water is expected to be 7.9°C. above the ambient water temperature at a velocity of 1.5 m./sec.

NSPC said (P. 9-40) that no demersal or pelagic fish exist between Table Head and Point Aconi, presumably because of the lack of suitable habitat. Also, the proponent feels that the slightly warmer water, while raising the ambient water temperature near the outfall by about 3°C., will encourage lobster growth.

RECOMMENDATION NO.18:

IT IS RECOMMENDED THAT THE DEPARTMENT OF FISHERIES AND OCEANS BE INVITED TO GIVE COMMENTS AND SUGGESTIONS REGARDING A LONG-TERM MONITORING PLAN OF THE FISH HABITAT, AND THAT THEIR REMARKS BE MADE AVAILABLE AND DISCUSSED WITH THE COMMUNITY ASSOCIATION OR LOCAL MONITORING COMMITTEE.

5.7.4 Effect of Chlorination:

Some persons were concerned about the possible adverse effect of chlorine treatment of the intake water, particularly any residual chlorine on fish and marine organisms. NSPC said in their EA Report (P. 9-75), that the proponent will monitor the total residual chlorine downstream of the condensers to ensure "no deleterious levels" and to assess the need for a dechlorination unit.

RECOMMENDATION NO.19:

IT IS RECOMMENDED THAT DEPARTMENT OF FISHERIES AND OCEANS BE INVOLVED IN MONITORING OF CHLORINE TREATMENT AND THE POSSIBLE EFFECT ON MARINE LIFE.

RECOMMENDATION NO.20:

IT IS RECOMMENDED THAT THE LOCAL COMMUNITY ASSOCIATION OR LOCAL MONITORING COMMITTEE BE INVOLVED IN THE PLANNING AND RECEIPT OF MONITORING INFORMATION AND DATA.

5.7.5 Aquaculture:

A suggestion was made that NSPC should consider the use of the warm water outfall resource as a basis for an aquaculture or fish farming operation (as is carried out at Lingan station).

RECOMMENDATION NO.21:

IT IS RECOMMENDED THAT CONSIDERATION BE GIVEN TO ISOLATING THE WARM CIRCULATING WATER RETURN AND THAT NSPC ENCOURAGE POSSIBLE FUTURE AQUACULTURE OPERATIONS.

5.7.6 Outfall Signs:

It was noted by the Panel that there should be some marking of outfall structure. The outfall structure is designed to be in 1.5-2.5 water depth and situated between 2 rubble groins protected by armour stone. The location is not shown clearly on drawings in the EA Report.

RECOMMENDATION NO.22:

IT IS RECOMMENDED THAT THE RETURN WATER OUTFALL BE CLEARLY MARKED AT THE LOCATION ON THE SHORELINE WITH APPROPRIATE WARNING SIGNS FOR PUBLIC PROTECTION.

5.7.7 Construction of Intake and Outfall:

Concern was expressed regarding the amount of work and construction activity and its effect on local fishermen. NSPC mentioned that construction of the intake structure and the 1100 m. of piping would be scheduled outside of the 15 May-15 July lobster fishing season (P. 9-74). A similar construction schedule should be carried out with the outfall.

This Panel concurs with the NSPC's proposal and schedule for construction.

Persons who expressed concerns to the panel about the Cooling Water System were:

Kevin Beaton
Melvin Howly
Kevin Chisholm
Bruno Marcocchio

SECTION 5.8

AIR QUALITY

5.8.1 Legislation
5.8.2 Dispersion Model
5.8.3 Carbon Dioxide
5.8.4 Air Monitoring Program

SECTION 5.8

AIR QUALITY

5.8.1 Legislation:

The operation of the Point Aconi thermal generating station is governed by the Clean Air Act, which contains the National Ambient Air Quality Objectives for Air Contaminants, a summary of which is attached as Table 1.

In addition, the "Thermal Power Generating Emissions National Guidelines for New Stationary Sources", indicates the quantities and concentrations above which nitrogen oxides, particulate matter, and sulphur dioxide, should not be emitted from fossil fuel-fired steam-driven electricity generating units". These emission limits are based on commercially-available technology, capable as a minimum of reducing emissions of nitrogen oxides by 50%, particulate matter by 99%, and sulphur dioxide by 90%.

The federal government recommended that provincial air pollution control agencies "adopt these guidelines as minimum standards" for new units.

The Federal Emissions Guidelines do NOT apply to stations with heat input levels LESS THAN 73.3 megajoules per second (250 million BTU/Hour). The emission guidelines applicable to the Point Aconi station are:

	Metric Units	British Units
Nitrogen oxides as NO_2	258 nanograms/Joule	0.6 pounds/million BTU
Particulate Matter	43 nanograms/Joule	0.1 pounds/million BTU
SO_2 (for plants emitting between 258 ng/J and 2580 ng/J)	258 nanogram/Joule	0.6 pounds/million BTU
SO_2 (for units emitting more than 2580 ng/J)	90% of emissions must be captured before release to atmosphere	

The Guidlines say re compliance, that:

> "Calculating the 720 hour rolling average allows the regulating agency to be informed daily of the maximum average emission rate in the previous 24 hours".

Under Emission Testing, the Guidelines state that within 180 days from startup, tests should be conducted:

> "by an independent testing agency and witnessed by a representative of the appropriate regulatory agency".

Again, under Emission Monitoring, the Guidelines say that there should be installed:

- a continuous monitoring system for measuring opacity
- a continuous system for monitoring sulphur dioxide
- a continuous monitoring system for measuring nitrogen oxides

and an evaluation of the performance of the continuous monitoring system should be conducted by an independent testing agency and a written report of results prepared and submitted within 60 days to the appropriate regulatory agency.

5.8.2 Dispersion Model:

NSPC's computer dispersion model predicted that for greater than 99.8% of the time, the ambient air quality, as measured by the predicted ground level concentrations of SO_2, NO_x, and SPM will be within the desirable limits of the Ambient Air Quality Guidelines.

The Fluidized Bed Combustion unit has a manufacturer's guarantee to capture 90% of the sulphur dioxide and to limit the discharge of nitrogen oxides to less than 172 nanograms/Joule (0.4 pound/million BTU) of heat input. Also, the guaranteed limit on particulate matter removal is 43 nanogram/Joule (0.1 pound/BTU) of heat input.

Thus, the Panel believes that the Point Aconi plant will meet the federal emissions guidelines, if all performance guarantees are met.

The EA Report mentions that an air quality monitoring program will be undertaken during the construction and operation of the plant.

RECOMMENDATION NO.23:

IT IS RECOMMENDED THAT NSPC ADHERE TO THE FEDERAL EMISSIONS GUIDELINES: IN DEVELOPING A CONTINUOUS AIR MONITORING SYSTEM FOR THE POINT ACONI STATION, IN HAVING IT EVALUATED BY AN INDEPENDENT TESTING AGENCY, AND IN REPORTING THE RESULTS, AS STIPULATED IN THE LEGISLATION.

The EA Report (P. 2-15) says future generation plans will include SO_2 emission control measures. The Panel believes that NSPC should make a definite commitment.

RECOMMENDATION NO.24:

IT IS RECOMMENDED THAT THE NSPC ENUNCIATE A POLICY OF INCLUDING SO_2 EMISSION REDUCTION EQUIPMENT ON FUTURE ELECTRICAL GENERATING UNITS.

RECOMMENDATION NO. 25:

IT IS RECOMMENDED THAT NSPC DECLARE A POLICY OF RETROFITTING EXISTING FOSSIL FUEL-FIRED GENERATING STATIONS WITH SO_2 REDUCTION EQUIPMENT.

RECOMMENDATION NO. 26:

IT IS RECOMMENDED THAT NSPC ESTABLISH AND DECLARE A POLICY OF INCORPORATING LOW NO_x DESIGN EQUIPMENT ON EXISTING AND FUTURE GENERATING UNITS.

5.8.3 Carbon Dioxide:

The fluidized bed combustion process proposed for use at Point Aconi will substantially increase CO_2 emissions compared to existing fossil fuel-fired generating stations.

The question of global warming and its causes is being widely and actively debated in the scientific community throughout the world.

This Panel believes that it would be unwise to refuse or to defer the proposed Point Aconi station, which at least offers substantial reductions of SO_2 and NO_x emissions into the atmosphere. NSPC should make these improvements to both new and existing units and not rely entirely on the "cost effectiveness" of these technologies. NSPC should make absolutely sure that it is kept well informed about any of the emerging technologies that reduce CO_2 emissions from electrical generating units such as used by the Corporation now and in the future.

RECOMMENDATION NO. 27:

IT IS RECOMMENDED THAT NSPC ESTABLISH AND DECLARE A POLICY OF CO_2 EMISSIONS REDUCTION, INCREASE RESEARCH AND DEVELOPMENT INTO CO_2 REDUCTION TECHNOLOGY AND MAINTAIN ACCESS TO INFORMATION ON WORLDWIDE DEVELOPMENTS OF CO_2 REDUCTION TECHNOLOGY.

The NSPC should make sure that sufficient space is allocated at each of its fossil fuel-fired generating stations to allow installation of future state-of-the-art emissions reduction equipment.

5.8.4 Air Monitoring Program:

The air monitoring network as shown in the EA Report (Fig. 10-14) indicates 3 monitoring stations near Mill Pond, Prince Coal Mine and near Little Pond. The air modelling computer program conducted by NSPC indicates (P. 10-19) that the ground level concentrations for nitrogen oxides, sulphur dioxide and suspended particulate matter will be in the desirable range of the National Air Ambient Quality Guidelines. The exception is the Cape Dauphin Mountain area where there could be potential g.l.c.'s with values in the tolerable range, according to the predictions from the program.

The Panel believes that there should be another measuring station at Cape Dauphin Mountain, and possibly one at one of the Bird Islands, even though data presented by NSPC mentions that prevailing winds blow in that direction only 4% of the time.

The EA Report (P. 10-5,&10-6) mentions that the baseline air monitoring study conducted by NSPC indicates three "bands of anthropogenic activity" and dismissed these as likely to be irrelevant or as having no measurable effect on the baseline air quality at Point Aconi, because of the frequency of prevailing winds. This Panel feels that the data from these bands should be included in the baseline air quality calculations.

The Panel also believes that, knowing that the Bird Islands have been proposed as an International Biological Program Site, NSPC should run modelling programs for predicted optimum stack height that will give no measurable impact on air quality on the Ciboux and Hertford islands.

RECOMMENDATION NO. 28:

IT IS RECOMMENDED THAT NSPC INSTALL A FOURTH AMBIENT AIR MONITORING STATION IN THE CAPE DAUPHIN MOUNTAIN AREA.

RECOMMENDATION NO. 29:

IT IS RECOMMENDED THAT NSPC CONFER WITH FEDERAL AND PROVINCIAL ENVIRONMENTAL AGENCIES REGARDING THE COMPLETE PROTECTION OF THE ENVIRONMENT AND BIRD POPULATION ON THE BIRD ISLANDS.

RECOMMENDATION NO. 30:

IT IS RECOMMENDED THAT NSPC, IN CONSULTATION WITH FEDERAL AND PROVINCIAL ENVIRONMENTAL AGENCIES, DETERMINE THE POSSIBLE EFFECTIVENESS OF A GROUND LEVEL CONCENTRATION MONITORING STATION FOR AMBIENT AIR QUALITY MEASUREMENTS ON THE BIRD ISLANDS.

RECOMMENDATION NO. 31:

IT IS RECOMMENDED THAT DATA OBTAINED FROM THE STACK EMISSION MONITORING PROGRAM AND THE GROUND LEVEL CONCENTRATION MONITORING PROGRAM BE MADE AVAILABLE FOR DISCUSSIONS WITH LOCAL COMMUNITY ASSOCIATIONS OR THE LOCAL MONITORING COMMITTEE.

The Air Monitoring Program does not mention Volatile Organic Carbon or Polycyclic Aromatic Hydrocarbons, which are produced by the combustion of fossil fuels.

RECOMMENDATION NO. 32:

IT IS RECOMMENDED THAT NSPC STUDY THE PRODUCTION AND RELEASE OF POLYCYCLIC AROMATIC HYDROCARBONS FROM FOSSIL FUEL-FIRED ELECTRICAL GENERATING UNITS AND BUILD THIS FACTOR INTO THE STACK AND AMBIENT AIR MONITORING PROGRAMS.

RECOMMENDATION NO. 33:

IT IS RECOMMENDED THAT NSPC CONTINUALLY EVALUATE TECHNOLOGIES WHICH SHOW POTENTIAL FOR HIGHER EFFICIENCIES WITH REDUCED COMBUSTION EMISSIONS.

RECOMMENDATION NO. 34:

IT IS RECOMMENDED THAT NSPC CONDUCT A COMPREHENSIVE INDUSTRIAL HYGIENE PROGRAM EMBRACING ALL WORKERS AT THE POINT ACONI GENERATING STATION.

Concern was also expressed as to what performance guarantees would be in effect in order to ensure that expected reduction in emissions of sulphur dioxide, nitrogen oxides and particulate matter are achieved.

RECOMMENDATION NO. 35:

IT IS RECOMMENDED THAT NSPC ENSURE THAT ALL CONTRACTS FOR AIR EMISSION REDUCTION EQUIPMENT CONTAIN FIRM CLAUSES REGARDING PERFORMANCE GUARANTEES.

Persons who addressed problems and concerns regarding air emission and air quality at the Point Aconi public consultation meeting were:

Neal Livingston
Richie Mann
Melvin Howley
Aaron Schneider
Bruno Marcocchio
Ron Nicholson

SECTION 5.9

GENERAL

CONSTRUCTION

PRACTICES

5.9.1 Blasting
5.9.2 Traffic
5.9.3 Fugitive Dust Control
5.9.4 Spills of Fuels & Chemicals
5.9.5 Steam Line Purges
5.9.6 Hazardous Chemical Storage
5.9.7 Conformance with EA Report

SECTION 5.9

GENERAL CONSTRUCTION PRACTICES

5.9.1 Blasting:

Residents expressed real concerns about the effects of any blasting operations, both from a noise standpoint and from the effects on their homes.

RECOMMENDATION NO. 36:

IT IS RECOMMENDED THAT NSPC CARRY OUT A PREBLAST SURVEY BEFORE CONSTRUCTION STARTS AND THAT THE LOCAL MONITORING COMMITTEE BE INVOLVED IN THE PLANNING AND INTERPRETATION OF RESULTS.

5.9.2 Traffic:

At present time coal is transported from Prince Mine to Victoria Junction and these approx. 92 trucks/day will, after Point Aconi plant is built, go to the generating station and be taken off Highways 162, 105, and 125, and use an extension of Highway 162. The maximum workforce is planned in 1991 at 421 workers, and NSPC assumes that they will not all be driving cars, but that there will be slight increase in traffic on Highway 105. Then in 1993, there will be the regular operating crew of 85 persons at the station. Limestone being delivered to the station from a source somewhere in Cape Breton will be approx, 44 trucks/8 hour day, or 6 trucks/hour. The Panel agrees with the remarks in the EA Report that, except for the construction period, changes in traffic will not be significant.

5.9.3 Fugitive Dust Control:

The EA Report says that dust resulting from construction and operation is "unlikely" to degrade the air quality in neighbouring communities. The Panel believes that the community deserves a firm commitment from NSPC that gravel and dirt roads have the dust suppressed with calcium chloride or some other agent.

RECOMMENDATION NO. 37:

IT IS RECOMMENDED THAT, PARTICULARLY DURING THE CONSTRUCTION AND STARTUP PHASES, NSPC APPLY AN APPROVED DUST SUPPRESSANT TO DIRT AND GRAVEL ROADS.

RECOMMENDATION NO. 38:

IT IS RECOMMENDED THAT TRUCKS CARRYING EARTH AND GRAVEL DURING CONSTRUCTION, AND CARRYING COAL AND LIMESTONE DURING PLANT OPERATION, BE COMPLETELY COVERED TO PREVENT SPILLAGE AND DUST NUISANCE.

5.9.4 Spills of Fuels and Chemicals:

The Panel is concerned about the possibility of spills of fuel and lube oils and chemicals used during startup and during plant operation.

RECOMMENDATION NO. 39:

IT IS RECOMMENDED THAT NSPC PREPARE AND HAVE IN PLACE BEFORE CONSTRUCTION A DETAILED CONTINGENCY PLAN FOR PREVENTION AND CLEANUP OF ANY SPILLS OF OILS, CHEMICALS, COAL AND LIMESTONE.

5.9.5 Steam Line Purge:

The EA Report mentions that during commissioning of the plant a steam purge will take place; it will be limited to between 8:00 a.m. and 6:00 p.m. with "notice given through the local media".

RECOMMENDATION NO. 40:

IT IS RECOMMENDED THAT NSPC BE REQUIRED TO GIVE PRIOR NOTICE OF ANY STEAM PURGING NOT ONLY THROUGH THE LOCAL MEDIA, BUT ALSO THROUGH THE LOCAL MONITORING COMMITTEE AND COMMUNITY ASSOCIATIONS AND SCHOOLS IN THE AREA.

5.9.6 Hazardous Chemical Storage:

The EA Report mentions the monitoring of transportation, loading, unloading of dangerous goods and hazardous chemicals.

RECOMMENDATION NO. 41:

IT IS RECOMMENDED THAT NSPC MAINTAIN A COMPLETE INVENTORY OF HAZARDOUS CHEMICALS ON SITE WITH A LOCATION PLAN AND APPROPRIATE DATA SHEETS, AND THAT A COPY BE GIVEN TO THE LOCAL FIRE DEPARTMENT, THE RCMP DETACHMENT AND THE DEPARTMENT OF THE ENVIRONMENT.

5.9.7 Conformance with EA Report:

The final acceptance of the EA Report means that the project can go ahead. If this happens the Panel would like some assurance that the actual construction and operation will be in accordance with the EA Report together with any stipulations imposed by virtue of this review by the Panel.

RECOMMENDATION NO. 42:

IT IS RECOMMENDED THAT NSPC CONFIRM THAT THE CONSTRUCTION AND OPERATION OF THE POINT ACONI PLANT WILL BE CARRIED OUT AS SPECIFIED IN THE EA REPORT AND ACCOMPANYING DOCUMENTATION, AND AS SET OUT IN THE STIPULATIONS IMPOSED BY THE ENVIRONMENTAL ASSESSMENT REVIEW.

SECTION 5.10

COMMUNITY

CONCERNS

5.10.1 Employment
5.10.2 Noise
5.10.3 Access Road Usage
5.10.4 Beach Usage
5.10.5 Buffering along Shoreline & Roadway
5.10.6 Transmission Line Effects

SECTION 5.10

COMMUNITY CONCERNS

5.10.1 Employment:

NSPC states in the EA Report that the Point Aconi project will provide 150,000 person days of work during construction and 85 permanent jobs during operation. Also the generating station will be a long-term customer for the coal mining and limestone industries in Nova Scotia.

Comments made at the hearing mentioned that the proposed generating station is vital to the long life of the Prince Mine which now employs 450 persons. It was noted by several presentors that many forms of spinoff employment will be secured for the Point Aconi area and neighbouring communities.

A primary concern was stated as being jobs which are badly needed in the area, but everyone has to work together to see the plant become a reality.

The NSPC has said that the construction phase will add approximately $30 million to this region's income. Also, during construction expenditures in Nova Scotia will amount to about $100 million. As well, the station will become a long-time outlet for limestone and coal in Nova Scotia.

Keeping in mind the high unemployment rate in Cape Breton (19.3%) compared to the Nova Scotia and Canadian averages, (10.9%) and (7.8%) respectively:

RECOMMENDATION NO. 43:

IT IS RECOMMENDED THAT, IN EVALUATING THE IMPACT OF THE PROPOSED POINT ACONI STATION, THERE BE SERIOUS CONSIDERATION GIVEN TO THE POSITIVE SOCIO-ECONOMIC EFFECT ON CAPE BRETON AND, IN PARTICULAR, THE POINT ACONI AREA.

Persons who mentioned these concerns to the Panel were:

Ted Marsh
Melvin Howly
Kevin Beaton
Henk Niesten
Joe Burke
Wes Stubbert

5.10.2 Noise:

NSPC conducted a noise survey in the Point Aconi site area to determine background sound pressure level readings, and the EA Report states: "the effect on the community is not expected to change significantly due to the relative isolation of the station".

Also, it is stated that noise levels at the station during operations will be similar to the noise generated at existing NSPC thermal generating stations.

Remembering that there will be new technology being used at this station, the Panel has two concerns:

- the actual measured effect of the completed and operating station on the Point Aconi area
- the sound pressure levels inside the plant and the potential effect on the workers, particularly near operating equipment such as the coal and limestone crushers

There is no mention of a continuing noise monitoring program after startup of the plant. Therefore we make this recommendation:

RECOMMENDATION NO. 44:

IT IS RECOMMENDED THAT NSPC CONDUCT A NOISE MONITORING PROGRAM DURING OPERATION OF THE PLANT, TO INCLUDE MEASUREMENT OF SOUND PRESSURE LEVELS AT PLANT SITE BOUNDARIES AND WITHIN THE OPERATING PLANT, AND THAT THIS DATA BE SUBMITTED TO THE NOVA SCOTIA DEPARTMENT OF THE ENVIRONMENT.

Persons who mentioned this concern to the Panel were:

Ted Marsh

5.10.3 Access Road Usage:

The Point Aconi Road Community Development Association asked that the Mill Pond Road remain accessible to Point Aconi Road and not be cut off by the extension of Highway 162. NSPC indicated they did not require the closing of Mill Pond Road and does not intend to request it be closed. This matter should be pursued with the Nova Scotia Department of Transportation, which has the responsibility for the upkeep of the road.

RECOMMENDATION NO. 45:

IT IS RECOMMENDED THAT THE MINISTER OF ENVIRONMENT INFORM THE MINISTER OF TRANSPORTATION THAT THE POINT ACONI COMMUNITY ASSOCIATION WANTS TO MAINTAIN ACCESS FROM MILL POND ROAD TO POINT ACONI ROAD AND THAT THE DEPARTMENT OF TRANSPORTATION DISCUSS THE MATTER WITH THE COMMUNITY ASSOCIATION.

Persons who expressed this concern to the Panel were:

Kevin Beaton on behalf of the Point Aconi Road Community Development Association

5.10.4 Beach Usage:

Residents value the use of two ocean beach areas, Battleman's Beach and Morrison Beach, in the vicinity of the plant site. They asked that present access roads be kept for use by people going to and from the beaches.

As a good-will gesture, NSPC should consider assistance to the Community Association in upgrading the beaches and picnic site areas.

RECOMMENDATION NO. 46:

IT IS RECOMMENDED THAT NSPC BE REQUIRED TO KEEP THE BEACH AREAS ADJACENT TO THE PLANT SITE OPEN AND ACCESSIBLE BY ROAD TO RESIDENTS.

Persons who expressed this concern to the Panel were:

Kevin Beaton on behalf of the Point Aconi Road Community Development Association.

5.10.5 Buffering Along Shoreline and Roadways:

No mention is made by NSPC specifically regarding aesthetic improvements that might be made at the plant site boundaries. For example, these might include:

- buffer strips of vegetation along the shoreline of plant site
- buffer strips of vegetation between the plant site and the roadway
- buffer strips between the ash disposal site and the roadway

RECOMMENDATION NO. 47:

IT IS RECOMMENDED THAT THE NSPC PROVIDE FOR BUFFER STRIPS OF VEGETATION ALONG THE SHORELINE AND HIGHWAY TO IMPROVE THE APPEARANCE OF THE SITE(S).

5.10.6 Transmission Line Effects:

Concerns were expressed regarding the impact of the transmission line corridor and also any possible ill effects of high voltage magnetic fields on human and animal health and crops. NSPC mentioned that the final location of the transmission lines wasn't specifically known at the time of the hearing.

The Panel makes these recommendations:

RECOMMENDATION NO. 48:

IT IS RECOMMENDED THAT NSPC KEEP UP TO DATE ON STUDIES BY THE SCIENTIFIC AND MEDICAL DISCIPLINES REGARDING THE EFFECTS OF HIGH VOLTAGE EMISSIONS ON HUMANS, ANIMALS AND CROPS.

RECOMMENDATION NO. 49:

IT IS RECOMMENDED THAT NSPC INSTALL THE NECESSARY TRANSMISSION LINES FROM THE POINT ACONI STATION WELL AWAY FROM RESIDENCES, SCHOOLS AND FARMS, AND THAT THE ACTUAL ROUTINGS BE DISCUSSED WITH THE POINT ACONI ROAD COMMUNITY DEVELOPMENT ASSOCIATION.

Persons who expressed this concern to the Panel were:

Melvin Howly
Roberta Bruce
Bruno Marcocchio
Brain Boudreau

SECTION 5.11

LOCAL MONITORING COMMITTEE

5.11.1 Structure of Committee
5.11.2 Dealing with Complaints

SECTION 5.11

LOCAL MONITORING COMMITTEE

5.11.1 Structure of Committee:

While "cautious optimism" was expressed by residents in the immediate area of the proposed generating plant, there were concerns which need to be addressed.

Of utmost concern was the formation of a local monitoring committee to safeguard their properties, domestic water supplies, air quality and the lobster fishery.

In particular, the residents requested a pre-construction survey of domestic wells to ascertain present water levels, a monitoring station to ensure that emissions will have no harmful effects on horticultural or agricultural crops, a pre-blasting survey of homes to establish the condition of them, further assurances that the lobster fishery will not be harmed in the future.

The Panel concurs that these are legitimate concerns for the residents of the Point Aconi area.

RECOMMENDATION NO. 50:

IT IS RECOMMENDED THAT A LOCAL MONITORING COMMITTEE BE FORMED BEFORE CONSTRUCTION BEGINS, CONSISTING OF REPRESENTATION FROM: THE POINT ACONI ROAD COMMUNITY DEVELOPMENT ASSOCIATION, THE FISHING COMMUNITY, THE AGRICULTURAL COMMUNITY, NOVA SCOTIA POWER CORPORATION, THE NOVA SCOTIA DEPARTMENT OF THE ENVIRONMENT (SYDNEY OFFICE), THE BRAS D'OR NORTH COMMUNITY DEVELOPMENT ASSOCIATION, AND THE GENERAL CONTRACTOR.

RECOMMENDATION NO. 51:

IT IS RECOMMENDED THAT THE LOCAL MONITORING COMMITTEE SHALL HAVE THE MANDATE TO PARTICIPATE IN THE PROJECT PLANNING PROCESS IN ALL ASPECTS OF THE PROJECT THAT MAY HAVE AN IMPACT ON THE LOCAL AREA; IN PARTICULAR, THE COMMITTEE SHALL ESTABLISH PRE-CONSTRUCTION BASELINE DATA ON POTENTIAL ITEMS OF CONCERN THAT HAVE ARISEN OR MAY ARISE AS THE PROJECT PROCEEDS.

RECOMMENDATION NO. 52:

IT IS RECOMMENDED THAT THE LOCAL MONITORING COMMITTEE BE INVOLVED IN THE PREPARATION OF CONTINGENCY PLANS RELATING TO SOLUTION OF ANY PLANT IMPACT ON THE LOCAL AREA.

5.11.2 Dealing With Complaints:

The residents said that their previous experience with developers of a strip mine in the Point Aconi area has left a negative impression of company responsibility with regard to loss or damage suffered by the residents. The onus was placed on the residents to prove that the company caused the loss or damage. The residents do not wish to present claims after the fact to the risk management department of the NSPC.

Though the residents at present perceive the NSPC as being a good corporate citizen, they wish to be assured this will be continued during the construction and operation of the proposed generating station.

RECOMMENDATION NO. 53:

IT IS RECOMMENDED THAT THE LOCAL MONITORING COMMITTEE BE THE VEHICLE THROUGH WHICH THE RESIDENTS REGISTER THEIR COMPLAINTS REGARDING ANY PERCEIVED LOSS OR DAMAGE.

Persons who addressed these concerns at the public consultation meeting were:

Henk Neisten - representing the farming community
Brian Boudreau - representing the Bras d'Or North Community Development Association
Kevin Beaton - representing the Point Aconi Road Community Development Association
Melvin Howley - representing residents in Point Aconi area
Alice Stubbert - representing the fishing community
Bruno Marcocchio - representing the Cape Breton Coalition for Environmental Protection

SECTION 5.12

PANEL COMMENTS

5.12.1 Future Expansion
5.12.2 Cleanup on Abandonment
5.12.3 Reuse of Byproduct Ash

SECTION 5.12

PANEL COMMENTS

5.12.1 Future Expansion:

The description of the proposed undertaking by the proponent, NSPC, makes reference in the EA Report to a 165MW generating station and possible future expansion to three units, or 450MW capability. Future planning should be clearly defined; ie, is the final 3-unit station 450MW or 495MW? It should also be spelled out that any expansion of the Point Aconi station beyond the proposed 165MW capability will be subjected to future environmental assessment reviews.

RECOMMENDATION NO. 54:

IT IS RECOMMENDED THAT THE NOVA SCOTIA DEPARTMENT OF THE ENVIRONMENT AND NSPC SPELL OUT CLEARLY THAT ANY EXPANSION BEYOND THE PROPOSED 165MW CAPABILITY AT POINT ACONI WILL BE SUBJECTED TO ANOTHER ENVIRONMENTAL ASSESSMENT REVIEW AND PUBLIC CONSULTATION PROCESS, AND THAT THIS FACT BE COMMUNICATED TO THE LOCAL COMMUNITY ASSOCIATION OR THE LOCAL MONITORING COMMITTEE.

5.12.2 Cleanup on Abandonment:

The proponent's EA Report noted that the Point Aconi Generating Station had a probable life of 30 years, based on the coal supply from the Prince Mine. In the event of termination of activity and abandonment of the site at Point Aconi, NSPC should address cleanup of the station and structures and the ash disposal site.

RECOMMENDATION NO. 55:

IT IS RECOMMENDED THAT NSPC DEVELOP A POLICY AND PLAN THAT WILL ENSURE APPROPRIATE CLEANUP AND LONG-TERM MONITORING OF THE SITES WHEN ABANDONED, AND THAT THIS COMMITMENT FORM PART OF THE OPERATING PERMIT THAT MIGHT BE ISSUED TO THE CORPORATION.

5.12.3 Reuse of Byproduct Ash:

The 165MW generating station with fluidized combustion will produce each year 205,000 tonnes of dry ash with a high content of calcium sulphate. When combined with added water the tonnage will amount to 281,000 tonnes/year. Thus, over a period of thirty years there will be vast quantities of potentially valuable ash in the 185 hectare disposal site.

The Panel feels that NSPC should develop a disposal route for this ash by encouraging reuse of this material.

RECOMMENDATION NO. 56:

IT IS RECOMMENDED THAT NSPC EXPLORE OUTLETS TO REUSE THE POTENTIALLY VALUABLE ASH BY-PRODUCT OF THE FLUIDIZED COMBUSTION PROCESS.

ACKNOWLEDGMENTS

The Environmental Control Council acknowledges the valuable contributions made by individuals and organizations who prepared written and/or oral submissions and those who attended the public consultation meetings. Without the interest and contribution of all these people, completion of this report would not have been possible.

LIST OF APPENDICES

—Letters from the Minister

—Advertisements placed in newspapers

— Terms of Reference for the Environmental Assessment Report

— Comments regarding the Terms of Reference, compiled by Environmental Assessment Administrator

— Executive Summary of the Environmental Assessment Report prepared by NSPC

—List of submissions

—Agenda of the hearings

—Chairman's opening remarks

—Bibliography

05-89-0156-03.9B ✓
04-89-0002

DEC 5 1989

Louis R. Comeau, President
Nova Scotia Power Corporation
P. O. Box 910
Halifax, Nova Scotia
B3J 2W5

Dear Mr. Comeau:

This letter represents my formal acceptance of the Point Aconi Generation Station Environmental Assessment Report.

The Environmental Assessment Report submitted on December 1, 1989, has been examined and, in consideration of its contents and the supplemental information submitted on December 5, 1989, the report is found to be complete and suitable for public and government agency review.

The Environmental Assessment Administrator shall be in contact with your staff to advise of the number of copies of the report required for the review process.

Sincerely yours,
Original Signed by
JOHN G. LEEFE

John G. Leefe
Minister

WAC/am
bcc: Armand F. Pinard
O. J. Betancourt, P Eng.
J. A. Turner, P. Eng.
W. A. Coulter, P. Eng.

Nova Scotia

Department of the Environment

Office of the Minister

PO Box 2107
Halifax, Nova Scotia
B3J 3B7

Our file no.

DEC 1 1 1989

Mr. James Harrison, Chairman
N.S. Environmental Control Council
P.O. Box 2107
Halifax, Nova Scotia
B3J 3B7

Dear Chairman:

RE: POINT ACONI GENERATING STATION PROJECT

Pursuant to Section 14(C) of Chapter 11 of the Statutes of Nova Scotia., 1988, the Environmental Assessment Act and regulations made thereto, I hereby refer the environmental assessment report on this project to the Council's attention.

Sincerely yours,

John G. Leefe
Minister

05-99-0156-03.9B

NOTICE

REGISTRATION OF UNDERTAKING pursuant to the NOVA SCOTIA ENVIRONMENTAL ASSESSMENT ACT

This is to advise that on July 28, 1989, Nova Scotia Power Corporation of P.O. Box 910, Halifax, Nova Scotia, B3J 2W5, registered Point Aconi Generating Station proposed for Point Aconi, Cape Breton County, Nova Scotia, with the Minister of the Environment for Nova Scotia under the Environmental Assessment Act, S.N.S. 1988, c.11.

This project has been previously registered under the Environmental Protection Act, S.N.S. 1973, c.6, December 2, 1988. In conjunction with that registration, extensive consultation has taken place with both the government and the public. As a result, a series of environmental studies are being carried out to address identified concerns.

The purpose of the undertaking is to construct and operate a coal-fired, circulating fluidized bed generating station with a capacity of approximately 150 MW on a site that has potential for development of approximately 450 MW. The purpose of the project is to contribute to meeting the future electric requirements of Nova Scotia, at an acceptable standard of reliability, in an environmentally sound manner.

Construction of the undertaking is proposed for a March, 1990 start, with commercial operation scheduled for October 1, 1993.

Copies of the registration information may be examined at the following locations:

Nova Scotia Department of the Environment
5151 Terminal Road, Halifax
295 Charlotte Street, Sydney

Nova Scotia Power Corporation
Customer Service Centre
212 Commercial Street, North Sydney

Nova Scotia Power Corporation
Office of the Secretary
18th Floor, Barrington Tower
Scotia Square, Halifax

Sydney Mines Town Hall
112 Main Street, Sydney Mines

CAPE BRETON POST
1989 08 03

nova scotia power

NOTICE OF PUBLIC MEETING

POINT ACONI
GENERATING STATION
pursuant to the
NOVA SCOTIA
ENVIRONMENTAL ASSESSMENT ACT

NOTICE is hereby given that the Environment Control Council for the Province of Nova Scotia will meet with the public regarding the Point Aconi Generating Station. The meeting will be at:

Place: Point Aconi Community Hall, Point Aconi
Nova Scotia
Date: Wednesday, January 17th, 1990
Time: Sessions at 10:00 a.m., 1:00 p.m. and 7:00 p.m.

Any interested party may attend and make presentations after having notified the Council in writing on or before January 10, 1990. Submissions should be addressed to:

NOVA SCOTIA ENVIRONMENTAL CONTROL COUNCIL
P.O. BOX 2107
HALIFAX, NOVA SCOTIA
PHONE: 424-5300

DATED at HALIFAX, Nova Scotia this 12th day of December, 1989.

James L. Harrison
Chairman

This notice was published in the Chronicle Herald and the Cape Breton Post on the 12th, 22nd, and 29th of December 1989.

NOTICE

RELEASE OF ENVIRONMENTAL ASSESSMENT REPORT
pursuant to the
NOVA SCOTIA
ENVIRONMENTAL ASSESSMENT ACT

The Minister of the Environment for Nova Scotia received on December 7, 1989 the Environment Assessment Report submitted by the Nova Scotia Power Corporation for the Point Aconi General Project proposed for Point Aconi, Cape Breton County.

Interested members of the public may examine the Report at the following locations:

Public Information Centres

Nova Scotia Department of the Environment
— 295 Charlotte Street, Sydney
— 5151 Terminal Road, Halifax

Nova Scotia Power Corporation
— Customer Service Centre,
212 Commercial Street, North Sydney
— Office of the Secretary
18th floor, Barrington Tower, Scotia Square, Halifax

Sydney Mines Town Hall
— 112 Main Street, Sydney Mines

The Minister of the Environment invites interested Nova Scotians to provide written comments on the report on or before January 29, 1990.

Please send comments to:

ENVIRONMENTAL ASSESSMENT ADMINISTRATOR
NOVA SCOTIA DEPARTMENT OF THE ENVIRONMENT
P.O. BOX 2107
HALIFAX, NOVA SCOTIA
B3J 3B7

NOTE

1) An opportunity will also be provided to make views known to the Environmental Control Council
2) For more information contact the Environmental Control Council at 424-5300.

Nova Scotia
Department of the Environment
Honourable John G. Leefe
Minister

Dec. 9 Herald
Cape Breton
Post

POINT ACONI GENERATING STATION

TERMS OF REFERENCE FOR ENVIRONMENTAL STUDIES

The following sections provide the terms of reference for studies presently underway as part of the Environmental Assessment of the Point Aconi Generating Station. The terms of reference were developed based on consultation with government and the local residents of Point Aconi.

Air Quality

The Circulating Fluidized Bed (CFB) technology is designed to significantly reduce emissions from the combustion process. Approximately 90% of the sulphur dioxide (SO_2) which would be normally produced is removed from the combustion gases. Nitrogen oxides (NO_x) emissions are reduced significantly because of lower combustion temperatures. Typically, the emission levels from CFB units similar to that proposed for Point Aconi are 0.1 kilograms (kg) of nitrogen oxides per million kilojoules (kJ) of energy produced. The present guideline for emissions of NO_x is 0.258 kg/million kJ. 99.5% of fly ash will be collected in a baghouse (fabric filtering and collection unit).

Air quality studies are being carried out with the objective of predicting the ambient air quality which will exist after the new generating station is in operation. These are internal studies which comprise the following major components:

- field collection of one year of local meteorological information
- comparison of that meteorological data with historical climatic records
- measurement of present ground level concentrations of SO_2
- use of meteorological and local topographical information in a computer model to determine the optimum stack height to ensure that present ambient air quality is maintained.

Aquatic Environment

These studies have both a marine and freshwater component. The marine component is focused on potential effects of the circulating water (CW) system, particularly entrainment, entrapment, impingement and thermal stress to the aquatic organisms. Study activities evaluate present fish levels, plankton and larvae, benthic organisms (especially lobster), aquatic vegetation, water quality, and physical factors such as temperature, salinity, currents, waves, ice, and sedimentation/erosion.

The physical information will be used in a computer model to predict plume water temperatures and distribution. The configuration of the intake and outfall will be optimized based on this plume dispersion information, distribution of aquatic resources, and bottom/sub-bottom characteristics.

The freshwater component deals primarily with Aconi Brook, a possible freshwater supply. Study activities include evaluation of fish presence and migration (salmon, trout, alewife and smelt), benthic characterization, water quality and quantity, and habitat.

Particular emphasis has been placed on resolution of key concerns as follows:

- potential effects of biofoulant control on lobster - study activity includes literature review, lab testing, and observation/evaluation of existing power plant operations.

- identification of abundance and distribution of lobster habitat - study activities include benthic transects, aerial overflight, and discussions with lobster fishermen.

- possible capelin spawning area - study activities include description of the timing and distribution of the capelin migration and determination of local spawning area via literature search and field activities.

- potential effects of ice buildup - initial review of existing information to be supplemented as required by field measurements.

Water Supply

Several options have been considered for freshwater supply, the two primary ones being development of a well field or use of surface water from Aconi Brook.

The study evaluating the well field option has the following activities:

- review of existing data on rainfall, geology, hydrogeology and well observations for the Lower Morien Aquifer.

- establish and monitor both observation and test wells to determine water capability and quality.

- conduct a domestic well survey in the surrounding area to identify present use and quality of groundwater.

- using above information define the boundaries, recharge potential and long term yields of the aquifer.

Study activities related to evaluation of Aconi Brook as a water supply alternative include:

- biological evaluation of biota and habitat of the Aconi Brook watershed as described in the Aquatic Environment terms.

- review of hydrology and water quality of the Brook to determine available yield while minimizing environmental impact.

- consideration of storage and transfer logistics and impacts associated with this option.

The ultimate selection of a water supply source and delivery system will be based on environmental acceptability, cost-effectiveness and technical feasibility and will incorporate water reuse/conservation measures where practicable.

Terrestrial Ecology

The goal is to identify and describe existing land-use, flora and fauna of the area, rare or endangered species, special habitat, and historical/archaelogical sites. Activities include:

- vegetation/land-use evaluation via air photo analysis, ground-truthing transects and consultation with regulatory officials.
- special habitat and rare/endangered species outlined via literature review, site visits and contacts with agencies such as N.S. Museum, N.S. Lands and Forests, etc.
- historical/archaeological determination via contact with N.S. Museum, N.S. Archives, local historical groups, and field work as required.

The results of these activities will be used to ensure proper site layouts and, where required, to provide adequate environmental protection for sensitive resources.

Plant Site

The goal is to develop and operate the plant site in an environmentally acceptable manner. Studies are focused to address potential concerns including coal and limestone storage area runoff/leachate, erosion/siltation, dredging, wastewater treatment and oil storage/handling. Study activities include:

- hydrogeological and geotechnical information to be collected via boreholes, test pits and site investigations. Data will be obtained regarding soil stratigraphy, grain size distribution and hydraulic conductivities; bedrock characteristics; water quality; and site topography.
- determination of nearshore sediment and subsediment conditions via side-scan sonar and a limited borehole program.
- evaluation of sediment characteristics and chemical composition.
- definition of plant and site liquid effluent volumes and characteristics.

The results will be used to develop an environmentally acceptable approach to site construction activities and plant operation. Good construction and operation practices will be used where applicable to ensure proper containment and treatment of wastewater and site runoff prior to discharge, and to provide for the proper disposal of materials such as construction wastes and dredge spoil.

Solid Waste Disposal

The objective is to handle and dispose of solid waste (ash) in an environmentally responsible manner. Study activities include:

- determination of ash characteristics

- evaluation of potential sites for disposal of ash considering the environmental, technical and economic aspects of the operation.

- detailed environmental evaluation of the preferred site for disposal. This includes site investigations/observations, test pits, boreholes, and other field measurements to determine soil characteristics, topography, grain size distribution, hydraulic conductivity, surface and groundwater quality and quantity, and sensitive existing land and water uses in the immediate area.

- evaluation of measures for the development and operation of the site.

- development of a preliminary conceptual design based upon the information obtained during the site evaluation.

Community Environment

The objective is to minimize the effects of the development and operation of the project on the community environment. A study has been undertaken to provide a preliminary overview of socioeconomic issues in the project area. The study identified social and economic concerns and issues, examined trends in the social and economic development of the area, and identified benefits of the project. The results of this study were extensively used in the preparation of terms of reference of other studies.

Baseline information on noise levels is being collected to characterize conditions prior to operation of the new plant.

05.89-0156

POINT ACONI GENERATING STATION
ENVIRONMENTAL ASSESSMENT

Comments and Requirements
Arising From Review of
Terms of Reference

File Number: 05-89-0156-03.9B
Date: September 20, 1989

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Introduction

This document represents a summary of comments and requirements suggested by government agencies and the public following their review of Terms of Reference for studies associated with the Point Aconi Generating Station.

As a general requirement the Environmental Assessment Report must address all the elements listed in Section 13(1) of the Environmental Assessment Regulations. The information contained in this document is derived from comments received and is intended to provide specific guidance as the Report is prepared.

1.0 Air Quality

1.1 The objective of this study is not clear;

(a) to predict future ambient air quality or

(b) to ensure the maintenance of existing ambient air quality

1.2 The environmental assessment report should include an evaluation of local and long range air quality implications of SO_x, NO_x, CO_2, TSP emissions and thermal pollution from the stack(s).

1.3 The environmental assessment report should identify all potential sources of fugitive emissions including coal, limestone and ash and discuss proposed mitigation methods.

1.4 The report should discuss the significance of any VOC emissions associated with liquid fuel storage and propose mitigation as required.

1.5 The report should include a proposed monitoring program for NO_X, SO_X , TSP and fugitive emissions.

2.0 Aquatic Environment

2.1 One reviewer has suggested that whole water samples are preferred over samples obtained using plankton tow nets. The report should describe the methodology used in the collection of phytoplankton samples and indicate why that method of sample collection was chosen.

2.2 Video transects should be used as a basis for evaluation of lobster habitat. Videotapes should be retained by the proponent for examination by the appropriate regulatory officials during review of the environmental assessment report.

2.3 Herring are reported to be sensitive to noise. The report should address the possible effect of noise from the outfall on fish movement in the area.

2.4 The report should address the potential for and significance of supersaturation at the outfall of the circulating water system.

3.0 Water Supply

3.1 If the development of a well field is a viable option for the project's freshwater supply, then the report should address potential effects on surrounding wells and describe the monitoring programs and contingency plans designed to ensure that others will not be deprived of their water supply.

4.0 Terrestrial Ecology

4.1 The Four-toed salamander is known to exist on the proposed site. The report should include the results of a property survey identifying significant habitat areas for the salamander and appropriate mitigation methods should be described.

4.2 The impact of the project on the sea bird populations of the Bird Islands is not expected to be significant. However, one reviewer has noted that any loss of fish sources in the vicinity could have an impact on seabirds. The report should address the potential for the project to negatively impact the seabird populations of the Bird Islands.

5.0 Plant Site

5.1 The 18th century Boularderie settlement was just to the south of the proposed site. The report should contain the results of an archaeological survey of the site and, if necessary, an appropriate plan to ensure that any archaeological remains found during the survey will be recovered and that any remains encountered during construction will not be destroyed.

5.2 The Point Aconi area is well known for its rich Carboniferous fossil flora. The report should include a plan designed to ensure that any significant fossil material uncovered during construction is identified and protected from destruction.

6.0 Alternatives

6.1 The report should include a discussion of the feasibility of other energy sources, improved energy efficiency and energy conservation programmes as alternatives to the proposed undertaking.

6.2 The report should include an evaluation of alternate technologies such as Integrated Gasification Combined Cycle (IGCC).

7.0 Miscellaneous

7.1 The proposed undertaking is to be sited adjacent to an eroding shoreline. The report should contain a discussion of projected erosion rates and any implications for the project. If shoreline protection is planned, the report should describe the alternatives examined and the preferred protection plan along with its expected environmental impacts.

7.2 Maintenance of a buffer of undisturbed land between the plant and the shoreline will help to stabilize the shoreline, provide a screen to reduce on-shore winds and present a more aesthetically acceptable site when viewed from the Cabot Trail across open water. The report should either include a commitment to maintain a buffer of trees and other vegetation between the plant site and the shoreline or provide an explanation of why a buffer cannot be maintained.

7.3 The report should contain an evaluation of potential health threats (e.g. noise and dust) to plant workers and a discussion of the measures which will be implemented to ensure that any health threats are minimized.

Executive Summary of the Environmental Assessment Report prepared by NSPC

Nova Scotia Power proposes to build a 165 MW Generating Station at Point Aconi, on Boularderie Island, Cape Breton. In accordance with the Regulations enacted under the provincial Environmental Assessment Act, Nova Scotia Power has prepared this Environmental Assessment Report for the project. The Report provides the rationale for the proposed project, describes the technologies to be used, and assesses the effects of the proposed Station on the existing environment.

Rationale

Nova Scotia Power's planning process has identified that by 1993/1994 there will be a requirement for new generating capacity. At that time, without additional generating capacity, Nova Scotia Power will not be able to maintain its required 20% reserve over firm system peak. Having identified this requirement, Nova Scotia Power undertook an evaluation of the alternatives available for new generating capacity. Environmental, economic, financial, reliability and socioeconomic criteria were employed in the evaluation of both demand and supply side alternatives. One important environmental consideration during the evaluation was the need for Nova Scotia Power to be able to meet the provincially established objective for sulphur dioxide emissions by 1994.

Based on this evaluation, a 165 MW Station employing Circulating Fluidized Bed (CFB) combustion technology, located at Point Aconi near the Prince Mine in Cape Breton, was identified as the best alternative for meeting generation requirements in 1993/1994.

Project Overview

The proposed project involves the construction of a unit comprising the CFB combustor, turbine generators, coal and limestone storage and handling facilities, an ash management area, a well field to supply fresh water, and a circulating water (CW) system.

The proposed Station will use limestone, and run-of-mine coal from the Prince Mine in the CFB combustor. The CFB technology allows the burning of high sulphur coal with exceptional combustion performance and reductions in emission of acid gases. The added sorbent (limestone) captures up to 90% of the sulphur dioxide, generating solids which are removed with the ash. The lower temperature in the CFB boiler, in conjunction with the staged introduction of combustion air, leads to significantly reduced production of nitrogen oxides.

By burning the high-sulphur Prince Mine coal in a CFB unit, the various fuel blends for other Nova Scotia Power thermal generating facilities will be lower in sulphur content.

The site will contain coal and limestone receiving, storage, preparation and handling facilities. An emergency supply of coal will be maintained in a 120 000 tonne inactive storage pile, while run-of-mine coal will be kept in a 40 000 tonne active pile. Limestone will be stored in a 50 000 tonne active pile. All storage piles will be lined to protect ground water resources.

All runoff from these piles will be collected and combined with other site runoff and liquid process waters in a storage pond. Liquids from this pond will be treated in a wastewater treatment facility before discharge. Wherever possible, these discharge waters will be reused in processes such as ash conditioning. Such water conservation measures are a priority for the project.

All sanitary waste will be treated in a sewage treatment facility before discharge.

Bottom ash and fly ash from the combustor will be stored in separate silos on site. After mixing with water to improve its handling characteristics, the ash will be trucked to the ash management site, south of the Station where additional conditioning will be carried out. The ash management site will be developed on a cellular basis. Each cell incorporates a natural or engineered liner, and will be capped when it reaches its design height. All runoff from the ash management area will be collected and used in the conditioning process.

For the circulating water system, seawater will be drawn through a velocity cap structure located approximately 1000 m offshore. The velocity cap will be located in approximately 10-12 m of water, and will be connected to an underground conduit leading to the pumphouse on the northwest portion of the site. After passage through the condensers, the circulating water is discharged from a point approximately in front of the Station.

Baseline Studies

Between the initial registration of the proposed project in December 1988 and the production of this Report, Nova Scotia Power undertook an extensive series of baseline studies. The issues addressed through these studies were identified through meetings with local residents, and through discussions with various government agencies.

The studies undertaken establish the baseline conditions that exist in the vicinity of the proposed site. Specific studies investigated the geology, hydrogeology, air quality, meteorology, terrestrial biology, marine biology and physical oceanography of the area. Data from these studies were used in an evaluation of the environmental consequences of the proposed project, and to provide criteria for the Station design. The results from these studies are contained in the body of this Report.

Project Assessment

The project will provide 150 000 persondays of work during construction and permanent jobs for approximately 85 people during operation. During construction, there will be approximately 100 million dollars of construction related expenditures in Nova Scotia. The Station will become a long term customer for both the coal mining and the limestone mining industries in Nova Scotia.

Good engineering and construction practices, incorporating Provincial Guidelines and Regulations and federal Environmental Codes of Practice, will be employed in the design, construction and operation of the Station, ensuring minimization of potentially harmful effects.

The baseline studies have identified both positive, and potential negative impacts which have subsequently been addressed in project design.

The fractured and permeable nature of the geology underlying the Station site has resulted in plans to use a natural or engineered liner under the coal and limestone storage piles, drainage ditches, and leachate pond. All contaminated waters and leachates will be collected and treated in a wastewater treatement facility to adjust pH and remove suspended solids. Consistent with a priority to reuse and conserve fresh water, the treated waste water will be used in first stage ash conditioning, to the extent possible.

Study findings to date indicate that proper mixing, two-stage conditioning, and compaction of the ash will permit development of a relatively impermeable, stable ash management site with minimal leachate production. Waters from the runoff collection system will be used for additional (second stage) conditioning of the ash. Until the impermeable nature of the ash can be demonstrated, protection of the ground water resource will require use of a natural or engineered liner.

Effects on the valuable lobster fishery, the most significant component of the marine environment, will be minimized through critical design features. In particular, installation of the offshore velocity cap will be scheduled to avoid the fishing season. The intake conduit will be tunnelled, not dredged or excavated, thus minimizing impacts on lobster habitat. A velocity cap design for the intake will minimize entrainment of fish, and location of the intake in deep water will minimize the effects on ichthyoplankton and other marine organisms.

The use of Circulating Fluidized Bed combustion technology is intended to maximize protection of the atmospheric environment by greatly reducing sulphur dioxide and nitrogen oxide emissions. Meteorological study results indicate that the small amount of remaining emissions will not be directed toward major population areas or terrestrial resources (e.g. Bird Islands). Furthermore, the stack has been designed to minimize impacts on the local ambient air quality, ensuring adherence to regulatory objectives.

The net effect of the project on the community is predicted to be positive. Job creation, capital and operating spending in the area, and commitment to use of the resources of the Prince Mine will benefit the community. In addition, potentially problematic issues such as noise, dust and traffic have been addressed via design, protection measures, buffer zones, and the proposed extension of Highway 162.

Monitoring Programs

Nova Scotia Power will undertake a monitoring program during both the construction and operation phases of the Station to ensure compliance with relevant government regulations and guidelines, and to maintain the quality of the groundwater, freshwater, air and marine resources.

An Environmental Effects Monitoring program for this Station will be developed in conjunction with the Nova Scotia Department of the Environment.

Public Consultation Meetings: Point Aconi, 17 January, 1990

ORAL SUBMISSIONS

Kevin Beaton — Point Aconi Road Community Development Association

Brian Boudreau —President, Bras d'Or North Community Development

Roberta Bruce—National Action Committee Status of Woman-Environment

Joe Burke—United Mine Workers

Alfred Caffiers—Local citizen of Bras d'Or

Vincent Day—Local citizen of Bras d'Or

Melvin Howley—Bras d'Or North Community Development

Neal Livingston—Ecology Action Centre and Black River Hydro

Richie Mann, MLA—Nova Scotia Liberal Caucus

Bruno Marcocchio—Cape Breton Coalition for Environmental Protection

Ted Marsh—Miller & Associates, Barristers & Solicitors

Henk Niesten—Farming community of Point Aconi

Aaron Schneider—Centre for International Studies, UCCB

Heidi Schwartz—Save Kelly's Mountian Society

Alice Stubbert—Local citizen, Bras d'Or

Wesley Stubbert—District 20 Councillor, Cape Breton County

WRITTEN SUBMISSIONS

Kevin Beaton—Point Aconi Road Community Development Association

Kevin Chisholm—Energy Engineering Limited

Lois Corbett—Ecology Action Centre

Neal Livingston—Ecology Action Centre and Black River Hydro Limited

Clifford MacNeil—Bras d'Or North Community Development Corp.

Bruno Marcocchio—Cape Breton Coalition for Environmental Protection

William Marcus—Economist, JBS Energy Inc.

Ron Nicholson—Cape Breton Development Corporation

Henk Niesten—Farming community, Point Aconi area

Aaron Schneider—Centre for Internationl Studies, UCCB

AGENDA

Nova Scotia Environmental Control Council

Public Hearings into
Nova Scotia Power Corporation Generating Station, Point Aconi
Point Aconi Community Hall

Wednesday, January 17, 1990

10:00-10:15	Chairmans Opening Remarks
10:15-10:30	N.S.P.C. Presentation
10:30-11:00	Black River Hydro Limited (Neal Livingston)
11:00-11:20	Aaron Schneider Centre for International Studies UCCB
11:20-11:30	Break
11:30-Noon	Question Period
Noon-1:00	Lunch (Buffet)
1:00-1:15	Chairmans Opening Remarks
1:15-1:30	N.S.P.C. Presentation
1:30-1:50	Henk Niesten
1:50-2:10	Cape Breton Coalition for Environmental Protection and Atlantic Environment Network (Bruno Marcocchio)
2:10-2:30	Break
2:30-2:50	Brian Boudreau, President Bras d'Or North Community Development
2:50-3:00	Question Period

The Council will be available for media interviews or questions from the public. The evening session will commence at 7:00 p.m. After the presentations, the floor will then be open again for questions from the general public.

Evening, January 17, 1990

7:00-7:10	Chairmans Opening Remarks
7:10-7:30	N.S.P.C. Presentation
7:30-8:00	Point Aconi Road Community Development Association (Kevin Beaton)

CHAIRMAN'S OPENING REMARKS
PT. ACONI PUBLIC CONSULTATION MEETINGS
(17 JANUARY, 1990)

GOOD DAY, LADIES AND GENTLEMEN: MY NAME IS JIM HARRISON AND I WILL BE CHAIRMAN OF THESE PUBLIC CONSULTATION MEETINGS IN POINT ACONI. MY COLLEAGUES HERE ARE: SHIRLEY NICHOLSON AND MICHAEL MCGILL AND WE HAVE BEEN DELEGATED BY THE NOVA SCOTIA ENVIRONMENTAL CONTROL COUNCIL TO HEAR YOUR COMMENTS ABOUT THE ELECTRICAL GENERATING STATION PROPOSED BY THE NOVA SCOTIA POWER CORPORATION FOR THE POINT ACONI AREA.

MY RESPONSIBILITY IS TO MAKE SURE THAT ALL OF YOU WHO WISH TO MAKE A STATEMENT OR TO ASK QUESTIONS ARE PROVIDED WITH THAT OPPORTUNITY.

NOW, A FEW WORDS ABOUT THE EVENTS LEADING UP TO THIS MEETING:

THE UNDERTAKING WAS ORIGINALLY REGISTERED BY NOVA SCOTIA POWER CORPORATION ON 2ND DECEMBER, 1988, UNDER THE ENVIRONMENTAL PROTECTION ACT, S.N.S. 1973. THEN THE ENVIRONMENTAL ASSESSMENT ACT CAME INTO EFFECT ON 14 JULY, 1989. NOVA SCOTIA POWER CORPORATION VOLUNTARILY RE-REGISTERED THE UNDERTAKING UNDER THIS NEW ACT ON 28 JULY, 1989.

TERMS OF REFERENCE FOR THE ENVIRONMENTAL ASSESSMENT REPORT, AS PROVIDED FOR UNDER THE ACT AND REGULATIONS, WERE PREPARED AND FINALIZED WITH COMMENTS FROM INTERESTED NOVA SCOTIANS.

THE ENVIRONMENTAL ASSESSMENT REPORT WAS ACCEPTED AND RELEASED BY THE MINISTER AS NOTED IN THE CHRONICLE HERALD NEWSPAPER AD OF 9 DECEMBER, 1989, WITH WRITTEN COMMENTS INVITED BY 29 JANUARY, 1990. THE MATTER WAS REFERRED TO THE ENVIRONMENTAL CONTROL COUNCIL ON 11 DECEMBER, 1989.

NOTICES RE PUBLIC MEETINGS IN POINT ACONI COMMUNITY HALL WERE PUBLISHED ON 12, 22 AND 29 DECEMBER IN THE CHRONICLE HERALD AND CAPE BRETON POST AND ASKED THAT PERSONS WHO WISHED TO MAKE ORAL OR WRITTEN SUBMISSIONS NOTIFY THE NOVA SCOTIA ENVIRONMENTAL CONTROL COUNCIL BY 10 JANUARY, 1990. PEOPLE WERE THEN CONTACTED BY STAFF AND SCHEDULED INTO MUTUALLY ACCEPTABLE TIME SLOTS. THAT IS WHERE WE ARE NOW.

THE ENVIRONMENTAL ASSESSMENT ACT SAYS THAT THE ENVIRONMENTAL CONTROL COUNCIL SHALL:

-CONSULT WITH THE PUBLIC,

-RECOMMEND TO THE MINISTER OF THE ENVIRONMENT APPROVAL OR DISAPPROVAL, OR CONDITIONS WHICH OUGHT TO BE IMPOSED UPON AN UNDERTAKING IF IT PROCEEDS,

-PERFORM VARIOUS FUNCTIONS AND EXERCISE POWERS CONFERRED UPON THE COUNCIL UNDER THE ACTS.

THE COUNCIL HAS THE POWER TO EITHER APPOINT OR AUTHORIZE THE CHAIRMAN OF THE COUNCIL TO APPOINT A COMMITTEE OF COUNCIL TO PERFORM THE FUNCTIONS AND EXERCISE ANY OF THE POWERS OF COUNCIL. THE NOVA SCOTIA ENVIRONMENTAL CONTROL COUNCIL AT A REGULAR MEETING ON 8 NOVEMBER, 1989, AUTHORIZED THE FORMATION OF A THREE PERSON COMMITTEE FOR THIS WITH JAMES HARRISON AS CHAIRMAN.

IN CONSIDERING THE FORMAT OF THESE MEETINGS, THE COUNCIL DECIDED THAT PROVISIONS UNDER REGULATION 10 (1) MADE PURSUANT TO THE ENVIRONMENTAL PROTECTION ACT WILL BE FOLLOWED. THAT IS, THESE PUBLIC CONSULTATIONS WILL BE CONDUCTED IN AN INFORMAL MANNER, SO THAT THE MEETING PROCEDURES DO NOT INTIMIDATE EITHER YOU OR THIS COMMITTEE.

OUR AGENDA WILL BE AS FOLLOWS:

1. THE PROPONENT (NOVA SCOTIA POWER CORPORATION) WILL GIVE A <u>BRIEF</u> DESCRIPTION OF THE UNDERTAKING AND THE ENVIRONMENTAL IMPACTS CONSIDERED.

2. THOSE OF YOU WHO INDICATED THAT YOU WISHED TO BE HEARD WILL THEN PROCEED IN THE SEQUENCE ARRANGED WITH YOU BY THE STAFF.

3. BEFORE ANY FORMAL PRESENTATION IS MADE, YOU WILL BE ASKED TO TAKE AN OATH OR AFFIRMATION.

4. OTHER MEMBERS OF THE PUBLIC WILL HAVE AN OPPORTUNITY TO COMMENT AFTER THE SCHEDULED PRESENTERS.

5. ANY QUESTIONS WILL BE DIRECTED TO THE CHAIR, WHICH WILL THEN INTERPRET, IF NECESSARY, AND REDIRECT TO THE APPROPRIATE PERSON FOR RESPONSE.

6. ALL THE PROCEEDINGS ARE BEING TRANSCRIBED AND, THEREFORE, WE ASK THAT YOU MAKE SURE TO USE THE MICROPHONES, CLEARLY IDENTIFY YOURSELF AND YOUR PLACE OF RESIDENCE.

7. YOU WILL NOTE THAT WE HAVE PROVIDED MEDIA REPRESENTATIVES WITH WORK TABLE(S) AND REQUEST THAT ANY INTERVIEWS OR QUESTIONS BY THE MEDIA BE CONDUCTED OUTSIDE OF THIS MEETING ROOM. ALSO, WE WILL ALLOW IF YOU WISH PRELIMINARY CAMERA "SHOTS" OF THE MEETING TO BE TAKEN BEFOREHAND.

ARE THERE ANY QUESTIONS ANYONE MIGHT HAVE REGARDING THE STRUCTURE OF OUR MEETINGS?

WE WILL THEN PROCEED WITH THE PROPONENT'S DESCRIPTION OF THE UNDERTAKING.

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STUDIES AND REPORTS PERTINENT TO THE POINT ACONI PROJECT

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4. Thermal Power Generation Emissions - National Guidelines for New Stationary Sources, Environment Canada, 1981
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LIST OF ACCOMPANYING VOLUMES

Environmental Assessment Report

Written submissions to E.C.C.

Transcript of Pt. Aconi Hearings

Bibliography of studies and reports pertinent to the Pt. Aconi project

Biography of E.C.C. members conducting the public consultation

This information can be viewed at the Nova Scotia Department of the Environment Library.